

## WOLVERINE GAS AND OIL COMPANY

of Utah, LLC

Energy Exploration in Partnership with the Environment

April 19 2005

Ms. Diana Whitney Utah Division of Oil, Gas & Mining 1594 W. N. Temple, suite 1210 Salt Lake City, UT 84114-5801

RE:

Application for Permit to Drill Wolverine Federal 17-6

Covenant Field, Sevier County, UT

Dear Ms. Whitney:

Based on the results from the recent drilling at the Covenant Field, we are now proposing to add one additional well from the current pad drilling, which we have named the Wolverine Federal 17-6. This well will be drilling from the same pad location as the Wolverine Federal 17-3, 17-4, 17-5 and the 8-1. Because this well is a recent addition to the same pad as the previous four wells, we are hoping that this application can be approved a timely manner. Because we are drilling these wells from the same pad, it is important for us to be able to continue from one well to the next, before rigging down and moving to another pad. A delay would be very costly.

Diana, as you know, we like to handle our work in an orderly fashion, and to give you sufficient time to review the permit. However, there are times, when circumstances do not always allow us to do that, especially given these drilling conditions. Therefore, let me state in advance, I would greatly appreciate any help in getting this permit approved before we finish the current well, which we anticipate finishing within 30 days.

If you have any questions, please call me at 616.458-1150 (ext. 129) or email me at <a href="mailto:ehiguera@wolvgas.com">ehiguera@wolvgas.com</a>. Thank you again.

Sincerely,

Edward A. Higuera

Manager – Development

Encl: Application for Permit to Drill

RECEIVED

APR 2 0 2005

DIV. OF OIL, GAS & MINING

## CONFIDENTIAL

## STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING

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AMENDED REPORT

		•				(highlight changes)
	,	APPLICA	TION FOR	PERMIT TO	O DRILL	5. MINERAL LEASE NO: 6. SURFACE: private Fee
						7. IF INDIAN, ALLOTTEE OR TRIBE NAME:
B. TYPE OF WELL: OIL  GAS OTHER SINGLE ZONE MULTIPLE ZONE					B. UNIT OF CA AGREEMENT NAME:	
2. NAME OF OPI						9. WELL NAME and NUMBER:
3. ADDRESS OF	Gas & Oil C	ompany of	Utah, LLC		PHONE NUMBER:	Wolverine Federal #17-6
55 Campai		CITY Gran	d Rapids STA	TE MI 719 49		10. FIELD AND POOL, OR WILDCAT:  Covenant
4. LOCATION OF	WELL (FOOTAGE	S)				11, QTR/QTR, SECTION, TOWNSHIP, RANGE
AT SURFACE:	1680' FNL	& 2217 FV	VL Sec. 17 T2	3S-R01W		MERIDIAN:
					3S-R01W NENW	7421VV 17 200 01VV
			AREST TOWN OR PO	ST OFFICE:		12. COUNTY: 13. STATE: UTAH
	south of Sig					Sevier
	O NEAREST PROP	ERTY OR LEASE	LINE (FEET)	16. NUMBER O	F ACRES IN LEASE:	17. NUMBER OF ACRES ASSIGNED TO THIS WELL:
500' west					160	40
APPLIED FOR	O NEAREST WELL R) ON THIS LEASE	(FEET)	PLETED, OR	19. PROPOSED		20. BOND DESCRIPTION:
	approx. 1500		0)		6,770	BLM WY #3229
				23. ESTIMATED DURATION:		
5753' KB 5/18/2005 35					35 days	
24.			PROPOS	ED CASING A	ND CEMENTING PROGRAM	
SIZE OF HOLE	CASING SIZE,	GRADE, AND WE	IGHT PER FOOT	SETTING DEPTH	CEMENT TYPE, QUA	ANTITY, YIELD, AND SLURRY WEIGHT
30"	20	X42	.25" wall	120	conductor	
17-1/2"	13-3/8"	J55	68 ppf	2,000	Lead: 500 sx hi-fill	3.86 cf/sx 11.0 ppg
					Tail: 450 sx Prem. G	1.18 cf/sx 15.8 ppg
12-1/4"	9-5/8"	N80	47 ppf	6,000	450 sx 50:50 Poz	1.71 cf/sx 13 ppg
8-1/2"	7"	N80	26 ppf	6,770	400 sx 50:50 Poz	1.27 cf/sx 14.35 ppg
25.				ATTA	CHMENTS	
VERIFY THE FOL	LOWING ARE ATT	ACHED IN ACCO	RDANCE WITH THE U	TAH OIL AND GAS CO	ONSERVATION GENERAL RULES:	
WELL PL	AT OR MAP PREPA	ARED BY LICENS	ED SURVEYOR OR EN	JGINEER	COMPLETE DRILLING PLAN	
EVIDENC	E OF DIVISION OF	WATER RIGHTS	APPROVAL FOR USE	OF WATER	FORM 5, IF OPERATOR IS PE	RSON OR COMPANY OTHER THAN THE LEASE OWNER
	Edward	1 A Higuer	2	/	Managar David	.la and
NAME (PLEASE	Edward 1	A. Tilguer	10/1	/	<sub>TITLE</sub> Manager-Deve	nopment
SIGNATURE	Edu	)cer	MA		DATE 4/16/2005	
This space for Stat	te use only)				Surf 418958X	BHU 418839X 4295715 RECEIVED 38,808340 27 111,93456 APR 20 2005
	) i (		A40		70137	2 & SARZHD
API NUMBER ASS	SIGNED: $\frac{4}{3}$	3-041-301	<u> </u>		APPROVAL: 38.80553	APR 2 0 2005
					-111.9333	27 -111, 434586 5 2003

DIV. OF OIL, GAS & MINING

## PROJECT PLAN OF DEVELOPMENT AND MASTER SURFACE USE PLAN

## **Kings Meadow Ranches #17-6**

NAME OF APPLICANT:

Wolverine Gas and Oil Company of Utah, LLC

One Riverfront Plaza, 55 Campau NW Grand Rapids, Michigan 49503-2616

PROJECT NAME:

"Wolverine Federal #17-6"

NE/NW of Section 17

Township 23 South – Range 1 West

**ATTACHMENTS:** 

A.) Project Map/Survey

B.) Well Site Location Layout

C.) Typical Cross Sections (Cut and Fill)D.) Wildlife & Vegetative Species of

Concern Summary

E.) Cultural Resource Survey Report

#### I. DESCRIPTION OF PROJECT:

Wolverine Gas and Oil Company of Utah, LLC (Wolverine) proposes to drill and explore for hydrocarbons, using a directional drilling program, from the Navajo Formation at depths of approximately 6600 TVD within the Wolverine Federal Exploration Unit situated in Sevier County, Utah:

#### TOWNSHIP 23 SOUTH, RANGE 1 WEST

Northeast Quarter of Northwest Quarter (NE/NW) of Section 17

Well Name & No.	Target	Elev.	Location	TD	Footages
LEASE # UTU-73528					
Kings Meadow Ranches #17-6	Navajo	5,753' kb	NE NW Sec 17, T23S-R1W	6,770'	1,680° FNL; 2,217° FWL

The attached Project Map (Attachment A) indicates the proposed well site and its intended configuration. Additionally, the existing access route is indicated. This well is being drilled within the "Wolverine Federal Exploration Unit" and upon privately owned surface.

Mineral rights within the Wolverine Federal Exploration Unit are owned by a variety of interests and are federally owned at the target bottom-hole location for this proposed well. The proposed surface plan will be reviewed and inspected by the appropriate regulatory agencies, state and federal, to ensure proper utilization of the surface reflecting an effort by Wolverine to minimize surface disturbance and waste. Appropriate Onshore Oil and Gas Orders and those of the Utah Division of Oil, Gas and Mining will be followed in the constructing, drilling, completion, operation, plugging and surface reclamation of this well.

The project is situated within an area that is referred to by the Utah Division of Oil, Gas and Mining (Statement of Basis, Kings Meadow Ranches 17-1, October 21, 2003) as "... placed in the High Plateaus section of the Colorado Plateau physiographic province in western central Utah. Some people have characterized this area as being in the Basin and Range – Colorado Plateau transition zone." The drill site itself is located in a flat area between steep hills and is contiguous to Highway 24 from which access to this site will be established. The flat area is dominated by sagebrush – grass communities and the nearby hillsides are dominated by Pinyon Pine – Juniper communities. The access route consists of an improved driveway off from Highway 24 entering onto the well site. BLM road construction standards will be adhered to as new improvements are constructed.

Wolverine's proposed "KMR #17-6" project is most easily accessible from Sigurd, Utah. From Sigurd, one would drive down Highway 24 heading east/southeasterly. At mile marker 13, drive approximately 0.6 miles and turn easterly onto the existing access road driving approximately 200 yards to the proposed well pad location.

Surface water is located in the area primarily in the form of the Sevier River, in the Peterson Creek drainage, a tributary of Brine Creek. Local springs arising from the volcanic rocks and ephemeral drainages also exist in the area including a drainage way situated along Highway 24. The Sevier River is approximately three (3) miles west of this proposed location.

#### **Geology and Soil Types**

Again quoting from the "Division of Oil, Gas and Mining, Statement of Basis, Kings Meadow Ranches 17-1", the well "...will likely spud into a thin alluvium covering the

evaporate-rich Jurassic age Arapien shale." "The Arapien Shale may have been somewhat intruded or elevated into the area between the Sevier Fault and the considerable parallel secondary faulting mapped in the Cedar Mountain – Black Mountain area..." It is anticipated that from surface to approximately 400 feet in depth, the lithology of the Quaternary will consist of unconsolidated sediments.

The soil type classified at the KMR #17-6 wellsite is the Billings silty clay loam. This soil type is a fine-silty, mixed calcareous, mesic Typic Torrifluvents and is usually found in areas containing two (2) to five (5) percent slopes. The soil is a deep, drained, silty clay loam. It features a light gray, moderately alkaline, strongly calcareous, silty clay loam surface soil that is approximately ten (10) inches thick. The subsoils consist of a light gray, moderately alkaline, friable, silty clay loam approximately 32 inches thick. The substrate material is a light gray, moderately alkaline, friable, silty clay loam with a small amount of gypsum veining.

Assuming that the drilling and completion of this well result in its ability to commercially produce hydrocarbons, appropriate market connections will be made upon proper permitting of such activities by all agencies having jurisdiction over said activities.

### II. SOIL EROSION CONTROL MEASURES:

The well pad will be sloped at about 1%, in the direction of the site's drainage so as to provide for a well-drained work area during drilling operations. Appropriate collection and infiltration basins will be constructed in the sloped area of the drill pad.

In all fill areas, the edges shall be diked to control run off.

Appropriate drill site drainage and sedimentation control measures will be incorporated in the operational plan. These may include utilization of earthen dikes along the fill portion of the drilling pad perimeter, stabilization of slopes as needed, location of the reserve pits in the cut portion of the drilling pad and the pad constructed so as to slope toward a collection and infiltration basin. Construction of the drill site shall be in accordance with the regulations and stipulations as defined by the State of Utah, Department of Natural Resources, Division of Water Rights.

Reclamation of the site will be in accordance with Best Management Practices and requirements of the Bureau of Land Management.

#### III. EXISTING ACCESS ROADS AND ROAD IMPROVEMENTS

The existing access road is identified and labeled on the project map. Steep, rough topography is not identified as a problem along our access route which was constructed by initially using fill material and covering it with approximately eight (8) inches of

shale/gravel. Another layer of road base material, approximately four (4) inches in depth, was placed on top of the shale/gravel.

#### IV. LOCATION OF EXISTING WELLS

The recently drilled "King Meadow Ranches 17-1" well is situated approximately 200 yards southwesterly of this proposed surface site location and is situated in the Southeast Quarter of the Northwest Quarter (SE/NW), "Wolverine Federal #17-3" Northwest Quarter of Southwest Quarter (NW/SW), "Wolverine Federal #17-4" Northwest Quarter of Southeast Quarter (NW/SE) and the "Wolverine Federal #17-5" Southeast Quarter of Northeast Quarter (SE/NE) of Section 17, Township 23 South, Range 1 West, Sevier County, Utah. "Wolverine Federal 17-2" is located approximately one-half mile southerly of this proposed well site and is situated in the Southeast Quarter of the Southwest Quarter (SE/SW) of Section 17, Township 23 South, Range 1 West, Sevier County, Utah.

#### V. DRILLING METHOD

Wolverine proposes to use a directional drilling program for the KMR #17-6. The mountainous terrain of the area is such that directional drilling is the most efficient method to minimize surface disturbance. By locating the well pad on a relatively flat surface, and drilling a directional well beneath this challenging topography, Wolverine can most effectively minimize surface disturbance and ensure proper utilization of resources.

#### VI. LOCATION AND TYPE OF WATER SUPPLY

Water for drilling the KMR #17-6 will be purchased from water wells nearby or drilled on location and pumped into storage tanks at the site. Water for drilling from nearby well(s) will be hauled to location and stored in storage tanks on the drill site. Wastewater will not be discharged on the surface at this site and the drilling of the well will not require a wastewater management plan.

#### VII. CONSTRUCTION MATERIALS

In most circumstances, natural earth materials were used for the construction of roads and fills. These were taken from locations essentially contiguous to or nearby the locations to be improved. When necessary, road base materials were used and delivered by the contractor for application on site and specifically as the initial fill material for the access road, which was then covered with approximately eight (8) inches of shale/gravel.

#### VIII. METHODS FOR HANDLING WASTE

The Reserve Pit will be dug on the well pad per the attached Well Site Location Layout (Attachment B). It will be used for the disposal of waste mud and drill cuttings and will be located on the south portion of the well site plan. The pit will be 100 feet X 240 feet and will be 10 feet deep. The pit will be lined with a synthetic liner having a minimum thickness of 12 mills and if the reserve pit is built in rock, geotextile or some other material approved by the Division of Oil, Gas and Mining shall be utilized. The Division of Oil, Gas and Mining shall be notified prior to lining the reserve pit in order to allow for Division inspection. Rules pursuant to R649-3-16 will be followed regarding the reserve pit as well as those governing Onshore Oil and Gas Operations (43 CFR 3160.)

Upon evaporation of fluids, pit closure occurs with the back fill of soil and its compaction to prevent settling. The usage of the pit is further described in the section VIII under pit closure.

All garbage will be taken off site and disposed of properly. Pursuant to R649-3-14, all rubbish and debris shall be kept in containers on the well site, and will be hauled to an approved disposal site upon completion of drilling and completion operations and as needed during such operations. There will be no chemical disposal of any type. Sewage is handled through the renting of portable toilets. These are serviced by the rental company and removed from site when no longer required.

#### IX. PLANS FOR RECLAMATION OF THE SURFACE

<u>Pit closure:</u> The pits will be fenced on three sides during all drilling operations and then the fourth side will be immediately fenced when the rig is moved off location. After evaporation of fluids, back-fill of sub-soil and compaction to prevent settling will occur within 90 days of the drilling and completing of the well. If necessary after 90 days, the fluids will be sucked out of the pit and transported off site.

The topsoil will be stripped off and stock piled in an area not to be disturbed. The topsoil will be placed back on the pit after back filling and then prepped for re-seeding.

The approximate Pit size is indicated on the Well Site Location Layout diagram attached hereto (Attachment B).

Revegetation Methods: Disturbed areas will be disked, seeded and "dragged", as needed; seeding with a mixture approved by the local USDA Natural Resource Conservation Service or the Bureau of Land Management.

Wolverine generally requires at least twelve (12) pounds per acre of seed distribution. Wolverine suggests that autumn seeding practices be used due to the terrain in this project area. Spring rain events are common and tend to cause severe run-off. Fall seeding will allow any moisture, whether rain or snow, to assist the seed into the ground.

Other Practices: Other practices that will be utilized to reclaim disturbed areas will include riprap when and if necessary to prevent erosion and the installation of silt fencing in sensitive and/or erosive areas.

<u>Timetable:</u> Reclamation of the surface will commence as soon thereafter construction, drilling and well completion are concluded, as is practicable, depending on weather. In the event of a dry hole, the drill site and roadways will be restored to their original condition as nearly as practicable within 180 days after plugging date of the well.

### X. SURFACE OWNERSHIP

The surface of the proposed well site is privately owned by Wolverine Gas & Oil Corporation. The contact person for Wolverine Gas & Oil is Edward A. Higuera, Manager-Development, who can be reached at 55 Campau NW, Grand Rapids, MI 49503. Phone: 616.458-1150 (ext. 129). Fax: 616.458-0869.

### XI. WELLSITE LAYOUT

Please see the attached "Well Site Location Layout" (Attachment B) for the well configurations.

### XII. PIPELINES AND STREAM CROSSINGS

PIPELINES: In the event of hydrocarbon production requiring transmission by pipeline, the proposed pipeline(s) will be designed, constructed, tested, operated and maintained in accordance with standard safety practices and by a combination of construction techniques intended to minimize to the greatest extent practical the impacts upon natural resources.

Pipelines will typically be installed by trenching. In these trenched areas, the contractor shall strip and stockpile topsoil to be replaced over the backfill portion upon completion of construction operations. Silt fencing will be installed at all stream crossings.

The proposed pipelines will be constructed with a combination of methods intended to minimize impacts to private, state and federally owned property, county roads and natural resources. The pipeline will be constructed by a combination of conventional construction techniques and special measures designed to minimize impacts to natural resources. Pipelines will be adequately compacted before the topsoil is replaced for re-seeding.

In general and where required, soil erosion control measures will consist of appropriate BMPs (Best Management Practices) to reduce the potential for erosion. The BMPs that will be utilized in upland areas include use of construction barriers where appropriate, land clearing, spoil piles, staging and scheduling, seeding and mulching. Note that spoil piles will not typically be seeded since exposure of the spoil piles should be minimal in time. All other proper BMP measures will be implemented to reduce the potential for erosion. Seeding of all raw soils after burial of pipe will be performed. However, mulching will be performed only within state or county road right-of-ways.

Generally speaking, in wetlands, appropriate BMPs will be implemented to minimize the potential for soil erosion within wetland construction zones. These measures shall include, but not be limited to, clearing, barriers, staging, filters, silt fencing, spoil piles, dewatering, seeding, and mulching.

#### XIII. GENERAL

TIMELINE: The following is a general order of construction and sequence of earth change by which our operations will proceed:

- 1.) Access Road and Well Pad Construction
- 2.) Drilling and Well Completion Operations
- 3.) Initial Well Pad Restoration
- 4.) Clearing of Pipeline Rights-of-way (if needed)
- 5.) Delivery and Layout of Pipe
- 6.) Pipe Welding and Inspection
- 7.) Trenching of Pipe
- 8.) Placement and Burying of Pipe

- 9.) Final Restoration of Site/Access/Pipeline Route
- 10.) Re-Seeding

All hillsides, creek banks, and other places where contractor has moved earth to facilitate operations shall be restored to as near original condition as practical. Replaced material and/or backfill will be protected from erosion to the satisfaction of Wolverine, the Bureau of Land Management and the Utah Division of Oil, Gas and Mining without undue delay.

Upon completion of any backfill, contractor shall clear pipeline rights-of-way and access routes of large rocks, stumps and other debris; fill holes, ruts and depressions, and shall keep the access road in a neat and acceptable condition. All cleanup shall be maintained by the contractor until final acceptance by Wolverine and the enforcing agency.

## XIV. ENVIRONMENTAL IMPACT ASSESSMENT:

It is anticipated that the drilling and operations planned, provided the success of this well, will not have any adverse affects to any wildlife or aquatic life in the area. There will be only a minor effect on the surface cover. Drilling and production operations should have minimal effect on the population patterns, land use, public utilities or public services in the near future for this rural area.

Noise levels during drilling and completion operations may be continuous but not unusually high. If production is achieved, noise levels should be minimal during the operation and maintenance of the wells.

Necessary soil erosion and sedimentation safeguards will be built into the well pad, access and future proposed pipeline routes to protect any nearby lowlands, where appropriate. Particular care will be exercised in order that all drain ditches be maintained and kept unobstructed to prevent water backup against spoil banks or backfill, causing erosion. The cumulative long-term effect on the immediate environment should be minimal.

If the well is productive, the effect on the air quality in the area is expected to be practically non-existent. Human activity in this area is somewhat limited, due to the nature of the location. Ranching operations and any activities in the area should not be adversely affected.

The site will then be contoured as closely as practical to its natural state, fine graded and stabilized. The well site and access route will be restored as soon as practical. If a well is productive, existing dikes will be maintained and erosion control procedures, as specified and required by the Bureau of Land Management, will be followed to insure protection of the local ecosystem.

#### Cultural

Please see, "Attachment E", Cultural Resource of A Well Pad (A-2) Near Sigurd, Sevier County, Utah.

#### Wildlife

Please see "Attachment D", a summary of Wildlife and Vegetative Species of Concern.

#### XV. SUMMARY:

In conclusion, the environmental impact of this project is considered to be minimal and every effort will be made to ensure the protection and preservation of the environment, as well as the standard of living for those affected by its operation.

This proposed project is aimed at increasing the hydrocarbon reserves within the State of Utah. In addition, in the event that production can be established in this project, it will be of financial benefit to the private holders of oil and gas rights within the "Wolverine Federal Exploration Unit", including the Bureau of Land Management in fulfillment of its stewardship responsibilities over federally owned oil and gas assets. We consider the environmental impact of this project to be slight and we will make every effort to be conscientious operators and to insure protection and preservation of the environment during the course of our drilling and producing operations.

Sincerely,

Wolverine Gas and Oil Company of Utah, LLC

By:

Ed Higuera

Manager - Development

Authorized Permitting Agent:

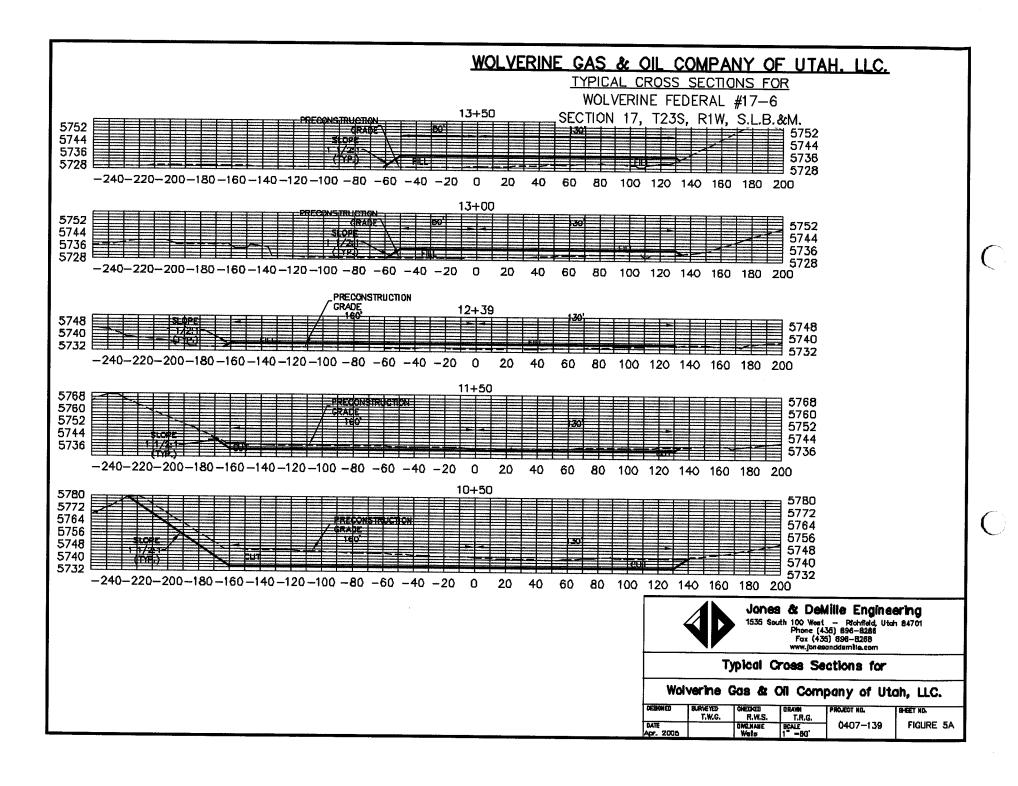
Western Land Services – Western Division

54 West Seymour Street

Sheridan, WY 82801

Donald L. Anderson, Chief Operating Officer, Phone: 307-673-1817

Local Contact: Shawn Burd, Phone: 435-896-1943



#### **Wolverine Federal #17-6**

The Wolverine Federal #17-6 wellsite is located approximately 4.2 miles southeast of the town of Sigurd in Township 23 South - Range 1 West, Section 17: Northeast Quarter of the Northwest Quarter (NE/NW) Salt Lake Base and Meridian in Sevier County, Utah.

The proposed Wolverine Federal #17-6 is situated adjacent to Highway 24 in a gentle rolling plains with hilly terrain on the west side. Plant habitat types within the area consist of a combination of Pinyon Pine– Juniper, located on the hillsides, and sagebrush – grass communities in the less gradient areas.

### THE PROPOSED ACTIONS

The proposed depth is 6,770 feet for the Wolverine Federal #17-6 well. The well pad dimensions will be approximately360' x 360' (including reserve pit). The access road will be constructed by initially using fill material and covering it with approximately 8 inches of shale/gravel. Another layer of road base material, approximately 4 inches in depth, will be placed on top of the shale/gravel.

### WILDLIFE AND VEGETATIVE SPECIES OF CONCERN

Potential effects concerning federally endangered, threatened, proposed, candidate, sensitive, and management indicator wildlife and vegetative species will be evaluated in the proposed area of disturbance before any surface disturbing activities occur. It is understood that these activities and the proposed location will be evaluated by a BLM staff or approved biologist. A habitat analysis will be completed to evaluate which species may occur in the area. Surface use guidelines will be followed as will surface use restrictions and time limit stipulations in the area of concern for all affected species.

It is understood that the Wolverine Federal #17-6 wellsite is situated within a designated critical deer wintering range. Proposed activities are not anticipated to occur during any such wintering range seasonal restrictions. There is also the possibility that small clumps of Penstemon plants may be located within this project area. Wolverine Gas and Oil Company of Utah, LLC will take all necessary steps to protect the species of concern and as stipulated by the Bureau of Land Management.

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## Cultural Resource Inventory of A Well Pad (A-2) Near Sigurd, Sevier County, Utah



Jason Bright
Mountain States Archaeology, LLC
7190 South State Street
Midvale, Utah 84047

Project Number U-04-MV-0646p BLM Permit UT0480011

Cultural Resources Report UT0421



## Cultural Resource Inventory of A Well Pad (A-2) Near Sigurd, Sevier County, Utah

## Project Description

In July 2004, Western Land Services contracted Mountain States Archaeology to perform Class III cultural resource inventory of a small well pad and access route in Sevier County, Utah on behalf of Wolverine Oil and Gas.

The well pad and access route are located in Township 23 South Range 1 West, NW ¼ of SE ¼ of NW ¼ of Section 17 (Figure 1). A records search was performed for this area on March 2, 2004 at Utah SHPO. Craig Harmon at the Richfield BLM office forwarded records search information for a nearby project (Bright 2004a) on March 26<sup>th</sup>, 2004. Fieldwork was completed July 12th 2004.

#### Records Search

A number of previously completed projects were found within a mile of the current project locations. These include U-89-BL-0464 (the Sigurd/Kings Meadow Power Line), U-91-BL-0409 (Telephone Reroute), U-93-BL-0184 (Sage Flat Landfill), U-94-BL-0078 (Sage Flat Landfill Road), U-97-SC-0217 (Chevron Seismic Prospect) and U-99-BL-0488 (Salina Exchange).

In addition to these projects, MSA has completed or is currently involved with a number of other nearby projects. These include U-04-MV-0262 (Wellpad 17-2) located just southwest and across Highway 24 of the current or project, U-04-MV0395b, a pipeline from Wellpad 17-2 to Sigurd, U-04-MV-0647, another well pad located immediately north and east of A-2 (Figure 1) and U-04-MV-0106, a series of 8 seismic lines, one of which runs to the south of the current project location.

The seismic line survey documented two sites within a mile of the current project. Site 42SV2667 and 42SV2668 are small historic sites consisting of fence posts (e.g corrals) and trash scatters located west (42SV2667) and south (42SV2668) of the current project location. Neither site will be impacted by proposed activities.

#### Methods

The well pad location was plotted by MSA with coordinates provided by the client. The well pad itself is 360 feet by 180 feet, and was inventoried by one archaeologist walking 15-meter transects.

### Environment

The project location is located just east of Highway 24, south of Sigurd, Utah. Ground visibility was good within the well pad. The general area has already been developed. Vegetation is composed sagebrush with various bunch grasses and forbs. Sediments are a light brown sand and silt.

#### Results

No cultural resources were located within the well pad or access route. This includes archaeological sites and isolated finds.

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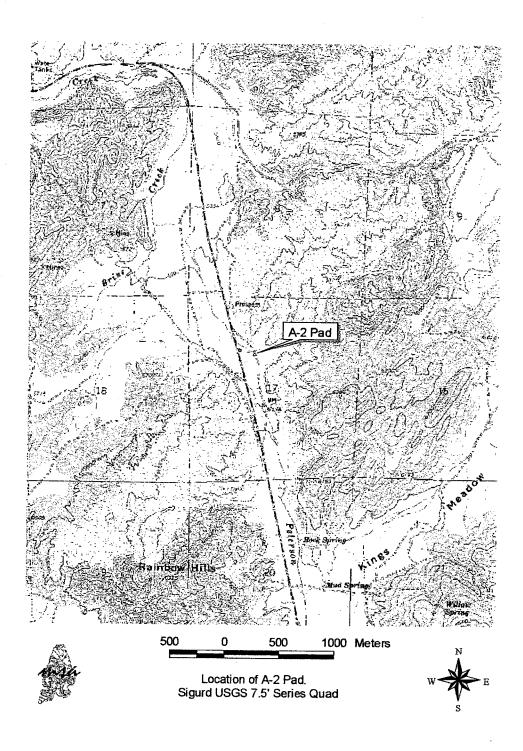


Figure 1. Location of A-2 well pad

## WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC

## **DRILLING PROGNOSIS**

Wolverine Federal # 17-6
NE NW SEC 17-T23S-R1W
SEVIER CO., UTAH

## BRIEF DRILLING PLAN

Due to surface topography constraints, directionally drill a 6770' MD (6640'TVD) test of the Navajo 1 formation on a day work contract basis from Wolverine's present work area known as Drill Pad A-2 (f) located in SE NW of Sec 17 T23S – R01W, Sevier Co, UT. Please refer to the directional drilling plan attached for detailed hole angle, trajectory and target information. Deviation is the primary drilling concern in this area. No abnormal pressure or hydrogen sulfide gas is expected, however, an H2S detector will be utilized. The projected surface and bottomhole locations are to be as follows:

Surface Location:

1680' fnl & 2217' fwl of Sec 17 T23S – R01W

BHL @ top of NVJO1 (6083' TVD) 660' fnl & 1925' fwl of Sec 17 T23S – R01W

20" conductor casing will be cemented to surface at approximately 120 ft BGL. 13-3/8" surface csg will be set & cemented to surface in a 17-1/2" hole deviated to approximately 3 deg at +/- 2000' MD (+/- 2000' TVD). A 12-1/4" hole will then be drilled to +/- 6000' MD (5850' TVD) maintaining an approximate 16 deg tangent section. 9-5/8" protective casing will be set from surface to TD & cemented over the lower 2000'. An 8-1/2" hole will then be drilled to +/- 6770' (6640' TVD). 7" production casing will then be run from TD back to surface & cemented to approximately 800' into the 9-5/8" protective casing.

### **EMERGENCY NUMBERS**

Sevier Valley Medical Center	(435)-896-8271
Medical Helicopter	(800)-453-0120
Sheriff Department	(435)-896-2600
Fire Department-Richfield, UT	(435)-896-5479
Bureau of Land Management (Richfield):	(435)-896-1500
Bureau of Land Management (Salt Lake City)	(801) 539-4045
Utah Division of Oil, Gas and Mining (Salt Lake City):	(801)-538-5340

## **United States Bureau of Land Management**

Contact Al McKee (801) 539-4045 24 hrs prior to spudding

## **Utah Division of Oil, Gas and Mining**

Contact Carol Daniels (801) 538-5284, 24 hrs prior to spudding

## **GENERAL INFORMATION**

**OBJECTIVE:** Navajo 1 @ 6083' (TVD)

**ELEVATION:** 5736' GL (actual) 5753' KB

PROJECTED TOTAL DEPTH:

6770' MD; 6640' TVD

SURFACE LOCATION:

1680' FNL & 2217' FWL

Section 17-23S-1W

**COUNTY:** Sevier

STATE: Utah

**DIRECTIONS TO LOCATION:** 

From the town of Sigurd, Utah go south

approximately 3.5 miles on Hwy #24 to location on

the left side of the road.

## **PROPOSED CASING PROGRAM:**

Hole Size	Casing Size	Wt./Ft.	Grade	Joint	Measured Depth Set	
30"	20"	.25 wall	X42	PE welded	120'	
17-1/2"	13-3/8"	68#	J-55	BTC	0'-2000'	
12-1/4"	9-5/8"	* 47#	N-80	LTC	0'-6000'	
8-1/2"	7"	** 26#	N-80	LTC	0' -6770'	

<sup>\*</sup> due to availability 47# HCP-110 may be substituted for N80

<sup>\*\*</sup> due to availability 23# HCP-110 may be substituted for 26# N80  $\,$ 

Hole Size	Casing Size	Drift ID, in.	OD of Couplings	Annular Volume in OH, cf/ft	Annular Volume in Csg, cf/ft	Capacity of casing, cf/ft
30"	20"	Conductor	Na			
17-1/2"	13-3/8"	12.259	14.375	.6946	1.0982	.8406
12¼"	9-5/8"	8.525	10.625	0.3127	0.4659	0.4340
8-1/2	7"	6.250	7.656	.1268	.1438	.2148

## **GEOLOGIC FORMATIONS:**

Formation	Interval (TVD)	Interval (MD)	Lithology	Prod	Abnormal
Arapien	Surf – 5715'	Surf – 5840'	sh,		Psi
			siltstone, salt, evaporites		
TwinCreek1	5715'- 6083'	5840'-6210'	Carbonates	X	
Navajo 1	6083'- 6640'	6210'-6770'	Sandstone w/ minor shale	$\frac{X}{X}$	
Total Depth	6640'	6770'	The state of the s		

## **CONSTRUCTION OF SURFACE LOCATION**

360'x 180' Pad 150'x 100' x 10' Reserve Pit with a 12 mil synthetic liner 96" diameter tin horn cellar, 10' deep. Flare pit a minimum of 100' from wellhead.

## SURFACE HOLE: 120' to 2000'

Directionally drill a 17-1/2" hole with a PDC bit, mud motor & MWD equipment to approximately 2000' using salt mud system from prior well (make hole to fit 13-3/8" casing). Loss circulation could be a problem in this interval and, if such occurs, begin pumping LCM sweeps. If loss circulation cannot be healed with ±25 ppb LCM, consider dry drilling (no returns). Maintain hole angle and direction in keeping with the attached directional plan.

## PRESSURE CONTROL & SAFETY EQUIPMENT FOR SURFACE **HOLE**

## Bottom to Top (see attached 2M Diverter diagram)

20" 2M x 20" SOW flange

20" 2M x 20" 2M mud cross w/ (2) 7-1/16" 2M side outlets one outlet 7-1/16" HCR valve w/ 6" blooie line to mud separator & flare pit

one outlet (blank)

20" 2M Annular Preventer

20" 2M flanged btm drilling nipple w/ fillup line

Upper kelly cock valves with handles available

Safety valves and subs to fit all drill string connections in use

Inside BOP or float sub available

## **Testing Procedure:**

## Annular Preventer & HCR Valve

The annular preventer will be pressure tested to 500 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

1) When the annular is initially installed

- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week. All BOP drills will be recorded in the IADC driller's log.

#### Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have two (2) independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

## MUD PROGRAM FOR SURFACE HOLE

<u>DEPTH</u>	MUD WEIGHT	TYPE	VISC	FLUID LOSS
flowrates for	9.6 – 10.2 hole every 100 – 20 hole cleaning. Use loss with Anco-Pha	salt gel and Flo	wZan polymer to	N/C ing. Maintain maximum maintain properties.

## CASING PROGRAM FOR SURFACE HOLE

DEPTH SIZ	E LENGTH	WT	GRADE	THREAD	REMARKS
120 - 2000' 13	3-3/8" 2000'	68#	J-55	BT&C	

## Casing Running Sequence:

guide shoe, 1 jt of 13-3/8" 68# J55 BT&C, Float collar, balance of 13-3/8" 68# J55 BT&C, centralizers as reqd. RU cement co., hold safety meeting, test lines, cement 13-3/8" casing per cement company recommendation and the cementing guide below. Displace with fresh water or mud.

## **CEMENTING PROGRAM FOR SURFACE HOLE**

Lead:			
	500 sx hi-fill	Mixed at: Yield:	11.0 ppg 3.86 ft <sup>3</sup> /sx
Tail:	450 sx Premium G	Mixed at: Yield:	15.8 ppg 1.18 ft <sup>3</sup> /sx

<u>MUST CIRCULATE CEMENT TO SURFACE</u> If the cement does **not** circulate to surface contact the BLM and UDOGM office for further instructions and remedial actions. Top out with premium cement regardless of circulation.

## **WOC A TOTAL OF 24 HOURS:**

Wait 4 hours with the hydrostatic pressure of the displacement fluid in place, then cut off conductor and weld on a 13-5/8" 5M x 13-3/8" SOW casing head w/ MBS spool configured to hang both 9-5/8" and 7" csg strings without nippling down BOPE. NU a 13-5/8" 5M double ram BOP w/ 5M annular and 5M choke manifold rigged to mud/gas separator, mud tanks and flare pit.

## PROTECTIVE CASING HOLE: 2000' to 6000'

Trip in the hole with a 12-1/4" bit, mud motor & MWD. Drill float, shoe and 20' of new hole. Perform a formation integrity test to 10.5 ppg mud weight equivalent. Directionally drill a 12-1/4" hole with a PDC and/or a TCI rock bit, mud motor & MWD equipment to approximately 6000' MD using same salt mud system as above. Loss circulation, moving salt, gypsum and anhydrite stringers may be a problem in this interval. Maintain hole angle and azimuth in keeping with the attached directional plan. Protective casing should be set into the top of the Twin Creek formation approximately 100-150'.

## PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PROTECTIVE CASING STRING

## Bottom to Top (see attached 5M BOP diagram)

13-5/8" 5M x 13-3/8" SOW casing head w/ (2) 2-1/16" SSO's (for 9-5/8")

13-5/8" 5M x 13-5/8" 5M multi-bowl casing spool (for 7")

13-5/8" 5M x 13-5/8" spacer spool

13-5/8" 5M x 13-5/8" 5M mud cross with (2) side outlets:

one outlet 2-1/16" 5M kill line

one outlet 3-1/16" 5M choke line

13-5/8" 5M double ram BOP w/ 5" pipe rams top & CSO rams btm

13-5/8" 5M Annular Preventer

13-5/8" 5M rotating head

Connect BOP to choke manifold with pressure guage Upper kelly cock valves with handles available Safety valves and subs to fit all drill string connections in use Inside BOP or float sub available

## **Testing Procedure:**

## Annular Preventer

The annular preventer will be pressure tested to 1500 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

- 1) When the annular is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week.

#### **Blowout Preventer**

The BOP, choke manifold and related equipment will be pressure tested to 4500 psi, or 70% of the internal yield of the casing. Pressure will be maintained for a period of at least ten minutes or until the requirements of the test are met, whichever is longer. At a minimum the pressure test will be performed:

- 1) When the BOP is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills will be recorded in the IADC driller's log.

#### Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close all rams plus the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have two (2) independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

The accumulator pre-charge pressure test will be conducted prior to connecting the closing unit to the BOP stack and at least once every six months thereafter. The accumulator pressure will be corrected if the measured pre-charge pressure is found to be above or below the maximum or minimum limits specified in Onshore Oil & Gas Order Number 2 (only nitrogen gas may be used to pre-charge).

## Choke Manifold Equipment, Valves and Remote Controls

All choke lines will be straight lines unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and vibration

A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will be maintained in the open position and will be closed only when the power source for the accumulator is inoperative.

Remote controls shall be readily accessible to the driller. Remote controls will be capable of both opening and closing all preventers. Master controls will be at the accumulator and

will be capable of opening and closing all preventers and the choke line valve (if so equipped).

The choke manifold and BOP extension rods with hand wheels will be located outside the rig sub structure. The hydraulic BOP closing unit will be located at least twenty-five feet from the well head but readily accessible to the driller.

A flare line will be installed after the choke manifold, extending 100 feet from the center of the drill hole to a separate flare pit.

## MUD PROGRAM FOR PROTECTIVE CASING HOLE

DEPTH	MUD WEIGHT	TYPE	VISC	FLUID LOSS
2000' – 6000'	9.8 - 10.2	Salt Mud	36 - 50	20-30cc or less

Maintain a salt mud system as salt and gypsum sections are drilled. If loss circulation becomes a problem use LCM sweeps to control seepage & clean hole.

## CASING PROGRAM FOR PROTECTIVE CASING HOLE

DEPTH	SIZE	LENGTH		WT	GRADE	THREAD	REMARKS
0' - TD'	9-5/8"	6000'	*	47#	N-80	LT&C	

Rig up casing tools and run 9-5/8" protective casing as follows:

Float shoe, 2 joint of 9-5/8" \* 47.0# N-80 LT&C casing, float collar, 6 centralizers, middle shoe joint and one every other joint for 12 jts, run balance of 9-5/8" 47# N-80 \* due to availability 47# HCP-110 may be substituted

## **CEMENT PROGRAM FOR PROTECTIVE CASING**

450 sx 50:50 POZ Weight: 13.0 ppg Yield: 1.71 ft<sup>3</sup>/sx

TOC at  $\sim$  4000'; Calculate cement volume based on gauge hole plus 30% excess. Displace with mud. Land 9-5/8" csg with casing mandrel. Lay down landing joint. Clean pits and prepare for next hole section.

## PRODUCTION HOLE: 6,000 to 6770'

Trip in the hole with an 8-1/2" insert bit, mud motor & MWD. Drill float, shoe and 20' of new hole.

## PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PRODUCTION CASING STRING

Same as Protective String above due to utilization of Multi-Bowl Casing Head Assembly – Land 9-5/8" through BOPE with casing mandrel, release, test & proceed to drilling production hole section – Nipple down & nipple up NOT required – all BOPE remains intact – normal periodic pressure testing remains on schedule

## **MUD PROGRAM FOR PRODUCTION HOLE**

DEPTH	MUD WEIGHT	TYPE	VISC	pH F	LUID LOSS
				•	
6000' - 6770'	8.3 - 9.0	LC Polymer	34-50	9.0-10.0	10cc or Less

## **EVALUATION PROGRAM FOR PRODUCTION HOLE**

At TD, circulate and condition hole clean for logs. Short trip to the intermediate casing monitoring well closely. TOH for logs. Run Induction tool as run #1 to determine hole conditions for logging. Adjust tool configurations depending on hole condition.

Mudlogger: From 2000' to total depth.

Electric Logs:

Tool	PCP to TD
SDL/DSN/GR (DSN PCP to surface casing)	Yes
HRI/GR/SP (DLL/MSFL/SP/GR available if brine system)	Yes
EMI	Yes
NMR	Yes

<u>DST:</u> none planned <u>Cores</u>: none planned

## **CASING PROGRAM FOR PRODUCTION HOLE**

DEPTH	SIZE	LENGTH	WT	GRADE	THREAD	REMARKS
0' – TD'	7"	6770;	* 26#		LT&C	

<sup>\*</sup> due to availability 23# HCP-110 may be substituted for 26# N-80  $\,$ 

Rig up casing tools and run 7" production casing as follows:

Float shoe, 1 joint of 7" 26# N-80 LT&C casing, Float collar, Run balance of 7" 26# N80.

## **CEMENT PROGRAM FOR PRODUCTION CASING**

400 sx (50:50) POZ Premium

Weight:

14.35 ppg

2 % Bentonite

Yield:

 $1.27 \text{ ft}^{3}/\text{sx}$ 

Friction reducer, salt & flocele

TOC at ± 5200 ft in 9-5/8" csg

Calculate cement volume based on log caliper +/- 25%. Displace cement w/water. Hang 85-90% casing weight in slips, ND, cut off, install B-section and night cap. Clean pits and release rig.

## **SCHEDULE**

Location preparation is presently scheduled to begin on or about May 15, 2005 Drilling operations are anticipated to begin on or about May 15, 2005

end



## State of Utah

orn land services

DEPARTMENT OF NATURAL RESOURCES Division of Water Rights

ROBERT L. MORGAN Executive Director

wes

JERRY D. OLDS State Engineer/Division Director

April 12, 2004

Kings Meadow Ranches C/O Mack Dastrup P.O. Box 570125 Sigurd, UT 84657

> TEMPORARY CHANGE APPLICATION RE: t28851

Dear Sir:

The above numbered Temporary Change Application has been approved subject to prior rights and the following condition:

The total amount of water diverted from Kings Meadow Creek will be limited to 14.0 acre-feet of water for uses associated with gas well drilling from May 30, 2004 to May 30, 2005. The historically irrigated land totaling 4.667 acres will not be irrigated.

Copies are herewith returned to you for your records and future reference.

Sincerely,

Kirk Forbush, P.E. Regional Engineer

for Jerry Olds, State Engineer

JO/KF/cr enclosure

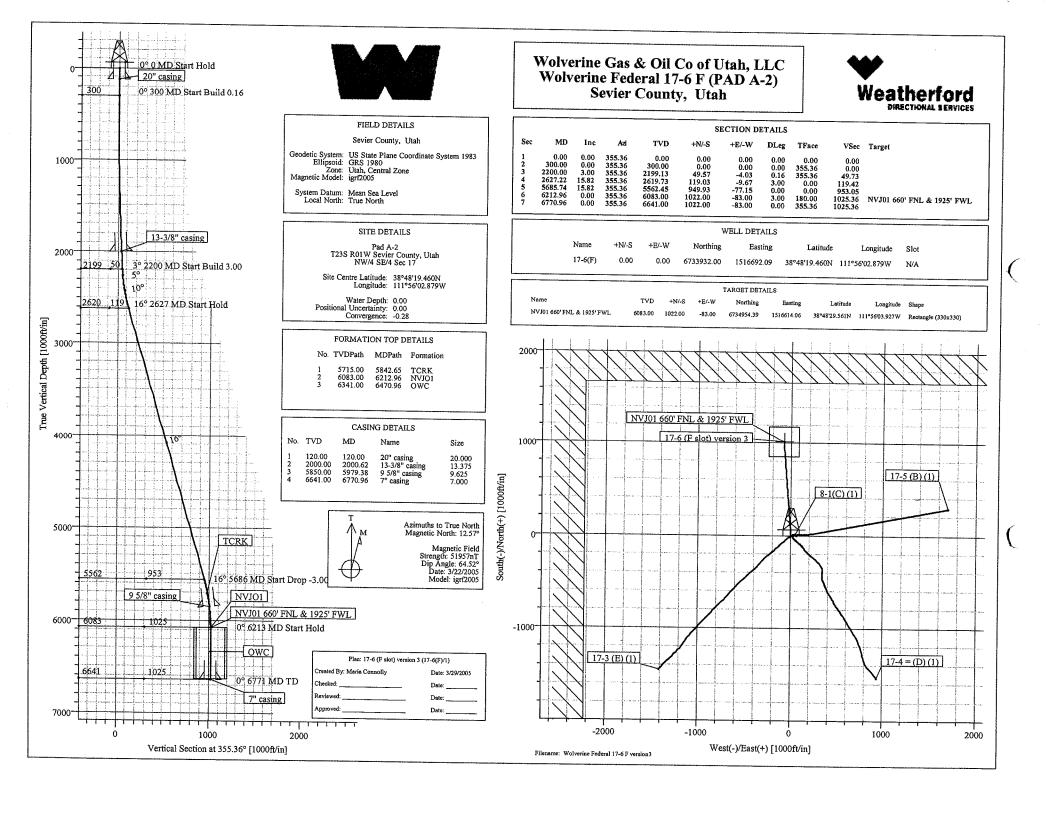


# APPLICATION FOR TEMPORARY CHANGE OF WATER RIGHT Rec. by KF

	•		
	STATE OF U	TAH <sup>APR 7 2004</sup>	Receipt # <u>04-01540</u> Acrofilmed
	Cle #2516	RICHFIELD AREÄ	Roll #
or the purpose of obtaining permission to	make a temporary change	of water in the State o	
or the purpose of obtaining permission to ereby made to the State Engineer, based equirements of Section 73-3-3 Utah Code	upon the following showing Annotated 1953, as amend	g of facts, submitted in led.	n accordance with the
*WATER RIGHT NO. 63 2529	*APPLICATION NO.	t 28851.	
Changes are proposed in (check those a			
x point of diversionx	place of use. x	nature of use	x period of use
OWNER INFORMATION	m n isi		
Name: Kings Meadow Ranches	- Evan Dastrup		*Interest:%
Address: P.O. Box 116			
City: Sigurd			
*PRIORITY OF CHANGE: 4/7/04		*FILING DATE:	4/7/04
RICHT EVIDENCED BY: A Portion			
Dai America America			
- Prior Approved Lemborary Change Appl	ncations for this right:		
Prior Approved Temporary Change Appl			
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QUANTITY OF WATER: SOURCE:Kings Meadow Creek COUNTY: Sevier	cfs and/or14	ac-ft.	<b>* * * * * * *</b> * * * * * * * * * * * *
QUANTITY OF WATER:  SOURCE: Kings Meadow Creek  COUNTY: Sevier  POINT(S) OF DIVERSION: S	cfs and/or14	ac-ft.	<b>* * * * * * *</b> * * * * * * * * * * * *
QUANTITY OF WATER:  SOURCE: Kings Meadow Creek  COUNTY: Sevier  POINT(S) OF DIVERSION: S	cfs and/or14	ac-ft.  from NW corner	<b>* * * * * * *</b> * * * * * * * * * * * *
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10.	NATURE AND PER	IOD OF USE	10731			
•	Irrigation:	From $\frac{04/01}{61/01}$	$\frac{10}{12/31}$			
	Stockwatering:	From $\frac{01/01}{1}$	$-10\frac{12/31}{12/31}$			
	Domestic:	From 01/01	to _ <del>12/31</del>	·····		
	Municipal:	From,	to			
	Mining:	From				
	Power:	From From	10			
	Other:	110111	(0	····		
11.	PURPOSE AND EX	TENT OF USE	•			
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	Stockwatering (nur	mber and kind): $\_$				
	Domestic: F	amilies and/or $\_\_$	Persons.			
	Municipal (name):					
					the	Min
	Ores mined: _				The Company of the Co	****
	Power: Plant name	:			Type:Capacity: _	· · · · · · · · · · · · · · · · · · ·
	Other (describe):					
2.	PLACE OF USE Legal description of	of place of use by	40 acre tract(s):	Section 20	, T23S, RlW, SE/4,	, SLBM
	Canacitus	and Inundator				
	Height of dam:	feet.	d Area: 6			
14	Height of dam: Legal description of	feet. of inundated area  ****** THE FO	by 40 tract(s):OLLOWING CH	ANGES ARE PROP	OSED *****	
14	Height of dam: Legal description of the control of the cont	feet. of inundated area  ****** THEFO TER: s Meadow Cre	by 40 tract(s): OLLOWING CF cfs and/	IANGES ARE PROP	OSED ***************	10 10 10 10 10 10 10 10 10 10 10 10 10 1
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14. 15. 16. 17.	Height of dam: Legal description of Legal description of County: POINT(S) OF DIVE  POINT(S) OF REDIT The water will be	reet. of inundated area of inundated area  TER: SMeadow Cre er will be abandor er N RSION: S869' T23S,  erting Works: EIPTION: VERSION rediverted from	by 40 tract(s):cfs and/ek ned:, W 1,901' R1W, SLBM	or 14 or will be from SW cor	OSED ************************************	
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14. 15. 16. 17.	Height of dam: Legal description of Legal description of QUANTITY OF WASOURCE: Kings Balance of the water COUNTY: POINT(S) OF DIVE  Description of Dive *COMMON DESCRIPTION OF REDITED THE WATER WILL BE COUNT(S) OF REDITED THE AMOUNT OF WATER AMOUNT OF WAT	reting Works:  VERSION  rediverted from  erting Works:  VERSION  rediverted from  ter to be consume	by 40 tract(s):cfs and/ek ned: , W 1,901' R1W, SLBM	cfs orac	osed as heretofore:at a point:at a point:	
14. 15. 16. 17.	Height of dam: Legal description of Legal description of County: Point(s) of Rediction of Diversity of Water Will be Description of Diversity of Water Will be Description of Diversity of Point(s) of Rediction of Diversity of Point(s) of Rediction of Diversity of Water Will be Description of Diversity of Water W	reting Works:  VERSION:  VERSION:  VERSION  rediverted from  perting Works:  THE FORM	by 40 tract(s):	cfs orac-fs or	osed as heretofore:at a point:at a point:	•

	b met aru lau		$\overline{}$		
20. NATURE AND	PERIOD OF USE				
Irrigation:	From/to				
Stockwatering:					
Domestic:	From/				
Municipal:					
	From/to				
Power:	From 05 /30 /04 to				
Other:	1.10m 02 \20\04 10	05/50/05			
21. PURPOSE AND	· · · · · · · · · · · · · · · · · · ·				
• •	acres. Sole				
Stockwatering	(number and kind):				
	Families and/or				
Municipal (nar	ne):				
Mining:		Mining	District at the		P
	1:				
Power: Plant na	ame:		Type: Ca	pacity: _	
Other (describe	Use water for ga	s well drill	ing		
	on of place of use by 40 acre		n 17, T23S, R1W		
Legal descripti	on of place of use by 40 acre				
Legal descripti	on of place of use by 40 acre				
Legal descripti  23. STORACE Reservoir Nam	on of place of use by 40 acre	Sto	rage Period: from		
Legal descripti  23. STORACE Reservoir Nam	on of place of use by 40 acre	Sto	rage Period: from		
Legal descripti  23. STORAGE  Reservoir Nam  Capacity:  Height of dam:	on of place of use by 40 acre	Stor	rage Period: from	1	0
Legal descripti  23. STORAGE  Reservoir Nam  Capacity:  Height of dam:  Legal descripti	on of place of use by 40 acre	Stor d Area:acr ract(s):	rage Period: fromes.	1	0
Legal descripti  23. STORAGE  Reservoir Nam  Capacity:  Height of dam:  Legal descripti	on of place of use by 40 acre	Stor d Area:acr ract(s):	rage Period: from	1(	0
Legal descripti  23. STORAGE Reservoir Nam Capacity: Height of dam: Legal descripti 24. EXPLANATORY	on of place of use by 40 acre	Stor d Area:acr ract(s):	rage Period: fromes.	1	0
Legal descripti  23. STORAGE Reservoir Nam Capacity: Height of dam: Legal descripti 24. EXPLANATORY	c:ac-ft. Inundated area by 40 to see the forth to define more classes.	Stor	rage Period: fromes.	nclude a	o
Legal descripti  23. STORAGE Reservoir Nam Capacity: Height of dam: Legal descripti 24. EXPLANATOR' The following water rights us	on of place of use by 40 acre  ac-ft. Inundated area by 40 to seed for the same purpose. (Use purpose) (435), 896-5206	Stored Area:Stored Area:screen	rage Period: fromes.  pse of this application. It of same size if necessar	nclude arry):	o
Legal description  23. STORAGE Reservoir Name Capacity: Height of dam: Legal description  Legal description  24. EXPLANATOR' The following water rights us Mack Dastr	on of place of use by 40 acre  ac-ft. Inundated area by 40 to seed for the same purpose. (Use purpose) (435), 896-5206	Stored Area:Stored Area:screen	rage Period: fromes.  pse of this application. It of same size if necessar	nclude arry):	o
Legal descripti  23. STORAGE  Reservoir Nam  Capacity:  Height of dam:  Legal descripti   24. EXPLANATOR'  The following water rights us  Mack Dastr  P.O. Box 5	on of place of use by 40 acre  ac-ft. Inundated feet. on of inundated area by 40 to sed for the same purpose. (Use to purpose) (Use to purpose) (435) 896-5206	Stored Area:Stored Area:acres  ract(s):  early the full purpose additional pages  Ke P.	rage Period: fromes.  pse of this application. It of same size if necessal nneth Dastrup O. Box 570056	nclude at ry): (435)	o ny supplem 896–875
Legal descripti  23. STORACE Reservoir Nam Capacity: Height of dam: Legal descripti  24. EXPLANATOR The following water rights us Mack Dastr P.O. Box 5 Sigurd, Ut	on of place of use by 40 acre  ac-ft. Inundated  feet. on of inundated area by 40 to sed for the same purpose. (Use 1996) 896-5206 670125 cah 84657	Stored Area:Stored Area:screen  ract(s):  early the full purpose additional pages  Ke P. Si	rage Period: fromes.  pse of this application. It of same size if necessares in the property of the prop	nclude arry): (435)	o ny supplem 896–875
Legal descripti  23. STORACE Reservoir Nam Capacity: Height of dam: Legal descripti  24. EXPLANATOR' The following water rights us Mack Dastr P.O. Box 5 Sigurd, Ut	on of place of use by 40 acre  ac-ft. Inundated  fcet. on of inundated area by 40 to sed for the same purpose. (Use 10 (435) 896-5206 570125 ah 84657	early the full purpose additional pages  Ke P.	rage Period: fromes.  Disc of this application. It of same size if necessare in the property of the prop	nclude at ry): (435)	o ny supplem 896–875
23. STORAGE  Reservoir Nam Capacity: Height of dam: Legal descripti  24. EXPLANATOR' The following water rights us Mack Dastr P.O. Box 5 Sigurd, Ut	on of place of use by 40 acre  ac-ft. Inundated  feet. on of inundated area by 40 to sed for the same purpose. (Use 1996) 896-5206 670125 cah 84657	early the full purpose additional pages  Ke P. Si  even though he/sh h the courtesy of the formation contains	rage Period: fromes.  pse of this application. It of same size if necessare nneth Dastrup  O. Box 570056  gurd, Utah 8465  ***********************************	nclude arry):  (435)  7  ssisted in of Vocation of Vocation	ny supplem 896-875  *******  The preparation of the



## **Weatherford International Planning Report**



Page:

Company: Wolverine Gas & Oil Co of Utah

Field: Sevier County, Utah

Site: Pad A-2 17-6(F) Well: Wellpath:

Time: 07:29:49

Co-ordinate(NE) Reference: Well: 17-6(F), True North

Vertical (TVD) Reference: Section (VS) Reference:

SITE 0.0 User (0.00N,0.00E,355.36Azi)

Plan:

17-6 (F slot) version 3

Field:

Sevier County, Utah

Map System: US State Plane Coordinate System 1983

Geo Datum: GRS 1980 Sys Datum: Mean Sea Level Map Zone: Coordinate System: Geomagnetic Model: Utah, Central Zone

Well Centre igrf2005

Site: Pad A-2

Ground Level:

Well Position:

Wellpath: 1

Current Datum:

Magnetic Data:

Field Strength:

Vertical Section:

T23S R01W Sevier County, Utah

NW/4 SE/4 Sec 17

Site Position: From: Geographic Position Uncertainty:

Northing: Easting:

6733932.00 ft 1516692.09 ft Latitude: Longitude:

38 48 19.460 N 111 56 2.879 W

North Reference: Grid Convergence:

True -0.28 deg

Well:

17-6(F)

Slot is "site center" for pad A-2

3/22/2005

Depth From (TVD)

0.00

0.00 ft Northing: +N/-S+E/-W 0.00 ft Easting:

6733932.00 ft 1516692.09 ft

0.00 ft

Height

+N/-S

ft

0.00

Latitude: Longitude:

0.00

Slot Name:

38 48 19.460 N 111 56 2.879 W

Position Uncertainty:

0.00 ft

51957 nT

0.00 ft

0.00 ft

Drilled From: Surface

Tie-on Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 12.57 deg Mag Dip Angle: 64.52 deg

+E/-W Direction ft bearing

355.36

3/28/2005

Plan:

17-6 (F slot) version 3

Principal:

Date Composed: Version:

Tied-to: From Surface

#### Plan Section Information

MD ft	Incl deg	Azim bearing	TVD ft	+N/-S ft	+E/-W	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	355.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	355.36	300.00	0.00	0.00	0.00	0.00	0.00	355.36	
2200.00	3.00	355.36	2199.13	49.57	-4.03	0.16	0.16	0.00	355.36	
2627.22	15.82	355.36	2619.73	119.03	-9.67	3.00	3.00	0.00	0.00	
5685.74	15.82	355.36	5562.45	949.93	-77.15	0.00	0.00	0.00	0.00	
6212.96	0.00	355.36	6083.00	1022.00	-83.00	3.00	-3.00	0.00	180.00	NVJ01 660' FNL & 1925' FW
6770.96	0.00	355.36	6641.00	1022.00	-83.00	0.00	0.00	0.00	355.36	

#### Section 1: Start Hold

M		nci	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	TFO
f		eg	bearing	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	deg
300	_	0.00 0.00	355.36 355.36	0.00 300.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 355.36

#### Section 2: Start Build 0.16

MD ft	Inci deg	Azim bearing	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	
400.00	0.16	355.36	400.00	0.14	-0.01	0.14	0.16	0.16	0.00	0.00	
500.00	0.32	355.36	500.00	0.55	-0.04	0.55	0.16	0.16	0.00	0.00	
600.00	0.47	355.36	600.00	1.24	-0.10	1.24	0.16	0.16	0.00	0.00	
700.00	0.63	355.36	699.99	2.20	-0.18	2.20	0.16	0.16	0.00	0.00	
800.00	0.79	355.36	799.98	3.43	-0.28	3.44	0.16	0.16	0.00	0.00	
900.00	0.95	355.36	899.97	4.94	-0.40	4.96	0.16	0.16	0.00	0.00	
1000.00	1.11	355.36	999.96	6.73	-0.55	6.75	0.16	0.16	0.00	0.00	ŀ
1100.00	1.26	355.36	1099.94	8.79	-0.71	8.82	0.16	0.16	0.00	0.00	
1200.00	1.42	355.36	1199.91	11.12	-0.90	11.16	0.16	0.16	0.00	0.00	
1300.00	1.58	355.36	1299.87	13.73	-1.12	13.78	0.16	0.16	0.00	0.00	

## **Weatherford International Planning Report**



Page:

Field:

Company: Wolverine Gas & Oil Co of Utah

Site: Well:

Wellpath: 1

Sevier County, Utah Pad A-2 17-6(F)

Date: 3/29/2005

Time: 07:29:49

Co-ordinate(NE) Reference: Well: 17-6(F), True North

Vertical (TVD) Reference: SITE 0.0 Section (VS) Reference:

User (0.00N,0.00E,355.36Azi)

Plan: 17-6 (F slot) version 3

Section	2	:	Start	Build	0	16
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MD ft	Incl deg	Azim bearing	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	
1400.00	1.74	355.36	1399.83	16.62	-1.35	16.67	0.16	0.16	0.00		
1500.00	1.89	355.36	1499.78	19.77	-1.61	19.84	0.16	0.16	0.00	0.00 0.00	
1600.00	2.05	355.36	1599.72	23.21	-1.88	23.28	0.16	0.16	0.00	0.00	
1700.00	2.21	355.36	1699.65	26.91	-2.19	27.00	0.16	0.16	0.00	0.00	
1800.00	2.37	355.36	1799.57	30.90	-2.51	31.00	0.16	0.16	0.00	0.00	
1900.00	2.53	355.36	1899.48	35.15	-2.85	35.27	0.16	0.16	0.00	0.00	
2000.00	2.68	355.36	1999.38	39.68	-3.22	39.81	0.16	0.16	0.00	0.00	
2000.62	2.68	355.36	2000.00	39.71	-3.23	39.84	0.00	0.00	0.00	180.00	
2100.00	2.84	355.36	2099.26	44.49	-3.61	44.63	0.16	0.16	0.00	0.00	
2200.00	3.00	355.36	2199.13	49.57	-4.03	49.73	0.16	0.16	0.00	0.00	

#### Section 3: Start Build 3.00

MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	TFO deg
ft	deg	bearing	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
2300.00 2400.00 2500.00 2600.00 2627.22	6.00 9.00 12.00 15.00 15.82	355.36 355.36 355.36 355.36 355.36	2298.81 2397.95 2496.26 2593.49 2619.73	57.39 70.39 88.56 111.82 119.03	-4.66 -5.72 -7.19 -9.08 -9.67	57.58 70.63 88.85 112.19 119.42	3.00 3.00 3.00 3.00 3.00	3.00 3.00 3.00 3.00 3.00 3.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00

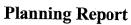
#### Section 4: Start Hold

	MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	TFO	
-	ft	deg	bearing	ft	ft	ft	ft	deg/100ft		deg/100ft	deg	
1 1	2700.00	15.82	355.36	2689.75	138.80	-11.27	139.26	0.00	0.00	0.00	0.00	
	2800.00	15.82	355.36	2785.97	165.97	-13.48	166.52	0.00	0.00	0.00	0.00	
	2900.00	15.82	355.36	2882.18	193.14	-15.69	193.77	0.00	0.00	0.00	0.00	
	3000.00	15.82	355.36	2978.39	220.30	-17.89	221.03	0.00	0.00	0.00	0.00	İ
	3100.00	15.82	355.36	3074.61	247.47	-20.10	248.28	0.00	0.00	0.00	0.00	
	3200.00	15.82	355.36	3170.82	274.64	-22.30	275.54	0.00	0.00	0.00	0.00	ļ
	3300.00	15.82	355.36	3267.03	301.80	-24.51	302.80	0.00	0.00	0.00	0.00	İ
	3400.00	15.82	355.36	3363.25	328.97	-26.72	330.05	0.00	0.00	0.00	0.00	
	3500.00	15.82	355.36	3459.46	356.14	-28.92	357.31	0.00	0.00	0.00	0.00	
	3600.00	15.82	355.36	3555.68	383.30	-31.13	384.56	0.00	0.00	0.00	0.00	
	3700.00	15.82	355.36	3651.89	410.47	-33.34	411.82	0.00	0.00	0.00	0.00	
	3800.00	15.82	355.36	3748.10	437.64	-35.54	439.08	0.00	0.00	0.00	0.00	
	3900.00	15.82	355.36	3844.32	464.80	-37.75	466.33	0.00	0.00	0.00	0.00	
	4000.00	15.82	355.36	3940.53	491.97	-39.95	493.59	0.00	0.00	0.00	0.00	
	4100.00	15.82	355.36	4036.75	519.14	-42.16	520.84	0.00	0.00	0.00	0.00	
1	4200.00	15.82	355.36	4132.96	546.30	<del>-4</del> 4.37	548.10	0.00	0.00	0.00	0.00	
	4300.00	15.82	355.36	4229.17	573.47	-46.57	575.36	0.00	0.00	0.00	0.00	
	1400.00	15.82	355.36	4325.39	600.63	-48.78	602.61	0.00	0.00	0.00	0.00	1
- 1	4500.00	15.82	355.36	4421.60	627.80	<b>-</b> 50.99	629.87	0.00	0.00	0.00	0.00	
	1600.00	15.82	355.36	4517.81	654.97	<b>-</b> 53.19	657.12	0.00	0.00	0.00	0.00	
	1700.00	15.82	355.36	4614.03	682.13	-55.40	684.38	0.00	0.00	0.00	0.00	
	1800.00	15.82	355.36	4710.24	709.30	-57.60	711.64	0.00	0.00	0.00	0.00	1
	1900.00	15.82	355.36	4806.46	736.47	-59.81	738.89	0.00	0.00	0.00	0.00	
	00.00	15.82	355.36	4902.67	763.63	-62.02	766.15	0.00	0.00	0.00	0.00	1
1	5100.00	15.82	355.36	4998.88	790.80	-64.22	793.41	0.00	0.00	0.00	0.00	
	200.00	15.82	355.36	5095.10	817.97	-66.43	820.66	0.00	0.00	0.00	0.00	
	300.00	15.82	355.36	5191.31	845.13	-68.64	847.92	0.00	0.00	0.00	0.00	1
	400.00	15.82	355.36	5287.53	872.30	-70.84	875.17	0.00	0.00	0.00	0.00	
	500.00	15.82	355.36	5383.74	899.47	-73.05	902.43	0.00	0.00	0.00	0.00	
1 -	600.00	15.82	355.36	5479.95	926.63	-75.26	929.69	0.00	0.00	0.00	0.00	
_ 5	685.74	15.82	355.36	5562.45	949.93	-77.15	953.05	0.00	0.00	0.00	0.00	;

### Section 5: Start Drop -3.00

MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	TFO deg
ft	deg	bearing	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
5700.00	15.39	355.36	5576.18	953.75	-77.46	956.89	3.00	-3.00	0.00	180.00
5800.00	12.39	355.36	5673.25	977.67	-79.40	980.89	3.00	-3.00	0.00	180.00
5842.65	11.11	355.36	5715.00	986.33	-80.10	989.58	3.00	-3.00	0.00	-180.00

## **Weatherford International**





Page:

Company: Wolverine Gas & Oil Co of Utah

Sevier County, Utah Pad A-2 Field:

Site: Well: 17-6(F)

Wellpath: 1

Co-ordinate(NE) Reference: Well: 17-6(F), True North Vertical (TVD) Reference: SITE 0.0

Section (VS) Reference:

User (0.00N,0.00E,355.36Azi) 17-6 (F slot) version 3

Section	5:	Start	Drop	-3.00
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MD ft	Incl deg	Azim bearing	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
5900.00	9.39	355.36	5771.44	996.50	-80.93	999.78	3.00	-3.00	0.00	180.00
5979.38	7.01	355.36	5850.00	1007.78	-81.85	1011.10	3.00	-3.00	0.00	-180.00
6000.00	6.39	355.36	5870.48	1010.18	-82.04	1013.50	3.00	-3.00	0.00	180.00
6100.00	3.39	355.36	5970.10	1018.67	-82.73	1022.03	3.00	-3.00	0.00	180.00
6200.00 6212.96	0.39 0.00	355.36	6070.04	1021.96	-83.00	1025.32	3.00	-3.00	0.00	180.00
0212.50	0.00	355.36	6083.00	1022.00	-83.00	1025.36	3.00	-3.00	0.00	-180.00

#### Section 6: Start Hold

MD ft	Incl deg	Azim bearing	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
6300.00	0.00	355.36	6170.04	1022.00	-83.00	1025.36	0.00	0.00	0.00	355.36
400.00	0.00	355.36	6270.04	1022.00	-83.00	1025.36	0.00	0.00	0.00	355.36
470.96	0.00	355.36	6341.00	1022.00	-83.00	1025.36	0.00	0.00	0.00	355.36
500.00	0.00	355.36	6370.04	1022.00	-83.00	1025.36	0.00	0.00	0.00	355.36
600.00	0.00	355.36	6470.04	1022.00	-83.00	1025.36	0.00	0.00	0.00	355.36
6700.00 6770.96	0.00	355.36	6570.04	1022.00	-83.00	1025.36	0.00	0.00	0.00	355.36
7770.90	0.00	355.36	6641.00	1022.00	-83.00	1025.36	0.00	0.00	0.00	355.36

#### Survey

300.00 0.00 355.36 300.00 0.00 0.00 0.00 0.00 0.00 0.00		MD ft	Incl deg	Azim bearing	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
400.00		300.00	0.00	355.36	300.00	0.00	0.00					LANACO
500.00 0.32 355.36 500.00 0.55 -0.04 0.55 0.18 0.16 0.00 MWD 600.00 0.47 355.36 600.00 1.24 -0.10 1.24 0.16 0.16 0.00 MWD 700.00 0.63 355.36 699.99 2.20 -0.18 2.20 0.16 0.16 0.00 MWD 800.00 0.79 355.36 799.98 3.43 -0.28 3.44 0.16 0.16 0.00 MWD 900.00 0.95 355.36 899.97 4.94 -0.40 4.96 0.16 0.16 0.00 MWD 1000.00 1.11 355.36 999.96 6.73 -0.55 6.75 0.16 0.16 0.00 MWD 1100.00 1.26 355.36 1099.94 8.79 -0.71 8.82 0.16 0.16 0.00 MWD 1200.00 1.42 355.36 1199.91 11.12 -0.90 11.16 0.16 0.16 0.00 MWD 1300.00 1.88 355.36 1299.87 13.73 -1.12 13.78 0.16 0.16 0.00 MWD 1400.00 1.74 355.36 1399.83 16.62 -1.35 16.67 0.16 0.16 0.00 MWD 1500.00 1.89 355.36 1499.78 19.77 -1.61 19.84 0.16 0.16 0.00 MWD 1500.00 2.25 355.36 1599.72 23.21 -1.88 23.28 0.16 0.16 0.16 0.00 MWD 1700.00 2.21 355.36 1699.65 26.91 -2.19 27.00 0.16 0.16 0.00 MWD 1800.00 2.37 355.36 1799.57 30.00 -2.51 31.00 0.16 0.16 0.00 MWD 1800.00 2.53 355.36 1599.73 30.90 -2.51 31.00 0.16 0.16 0.00 MWD 1900.00 2.53 355.36 1599.73 30.90 -2.51 31.00 0.16 0.16 0.00 MWD 1800.00 2.53 355.36 1599.73 30.90 -2.51 31.00 0.16 0.16 0.00 MWD 2000.62 2.68 355.36 1599.83 33.88 -3.22 39.81 0.16 0.16 0.00 MWD 2000.62 2.68 355.36 1599.84 35.15 -2.85 35.27 0.16 0.16 0.00 MWD 2000.62 2.68 355.36 1599.38 33.88 -3.22 39.81 0.16 0.16 0.00 MWD 2000.62 2.68 355.36 2599.81 57.39 -4.66 57.58 3.00 3.00 0.00 MWD 2000.62 2.68 355.36 299.81 57.39 -4.66 57.58 3.00 3.00 0.00 MWD 2000.62 2.68 355.36 299.81 57.39 -4.66 57.58 3.00 3.00 0.00 MWD 2000.00 15.82 355.36 2899.75 13.88 0.11.27 139.26 0.00 0.00 0.00 MWD 2000.00 15.82 355.36 2899.75 13.88 0.11.27 139.26 0.00 0.00 0.00 MWD 2000.00 15.82 355.36 2899.75 13.88 0.11.27 139.26 0.00 0.00 0.00 MWD 2000.00 15.82 355.36 2899.75 13.88 0.11.27 139.26 0.00 0.00 0.00 MWD 2000.00 15.82 355.36 2899.75 138.80 -11.27 139.26 0.00 0.00 0.00 MWD 2000.00 15.82 355.36 2899.75 138.80 -11.27 139.26 0.00 0.00 0.00 MWD 2000.00 15.82 355.36 2899.75 138.80 -11.27 139.26 0.00 0.00 0.00 MWD 2000.00 15.82 355.36 3353.30 278.99 716.99 713.48 166.52 0.00 0.00 0.00 MWD 3000.00 15.82	-											
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900.00		, 00.00	0.00	333.30	099.99	2.20	-0.18	2.20	0.16	0.16	0.00	MWD
900.00	1					3.43	-0.28	3.44	0.16	0.16	0.00	MWD
1000.00	-					4.94	-0.40	4.96	0.16			
1100.00	١				999.96	6.73	-0.55	6.75				
1200.00	1			355.36	1099.94	8.79	-0.71					
1300.00	1	1200.00	1.42	355.36	1199.91							
1400.00		1200.00	4.50	055.00	1000.0=							2
1500.00	ı										0.00	MWD
1600.00										0.16	0.00	MWD
1700.00									0.16	0.16	0.00	MWD
1700.00	1						-1.88	23.28	0.16	0.16	0.00	
1900.00		1700.00	2.21	355.36	1699.65	26.91	-2.19		0.16			
1900.00		1800.00	2.37	355 36	1799 57	30.90	-2.51	21.00	0.16	0.46	0.00	1414/0
2000.00	ł	1900.00										
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2100.00	ĺ											
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2300.00 6.00 355.36 2298.81 57.39 -4.66 57.58 3.00 3.00 0.00 MWD 2400.00 9.00 355.36 2397.95 70.39 -5.72 70.63 3.00 3.00 0.00 MWD 2500.00 12.00 355.36 2496.26 88.56 -7.19 88.85 3.00 3.00 0.00 MWD 2600.00 15.00 355.36 2593.49 111.82 -9.08 112.19 3.00 3.00 0.00 MWD 2627.22 15.82 355.36 2619.73 119.03 -9.67 119.42 3.00 3.00 0.00 MWD 2700.00 15.82 355.36 2689.75 138.80 -11.27 139.26 0.00 0.00 0.00 MWD 2800.00 15.82 355.36 2785.97 165.97 -13.48 166.52 0.00 0.00 0.00 MWD 2900.00 15.82 355.36 2882.18 193.14 -15.69 193.77 0.00 0.00 0.00 MWD 3000.00 15.82 355.36 2978.39 220.30 -17.89 221.03 0.00 0.00 0.00 MWD 3100.00 15.82 355.36 3074.61 247.47 -20.10 248.28 0.00 0.00 0.00 MWD 3200.00 15.82 355.36 3170.82 274.64 -22.30 275.54 0.00 0.00 0.00 MWD 3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD							-4.03	49.73	0.16	0.16	0.00	MWD
2400.00 9.00 355.36 2397.95 70.39 -5.72 70.63 3.00 3.00 0.00 MWD 2500.00 12.00 355.36 2496.26 88.56 -7.19 88.85 3.00 3.00 0.00 MWD 2600.00 15.00 355.36 2593.49 111.82 -9.08 112.19 3.00 3.00 0.00 MWD 2627.22 15.82 355.36 2619.73 119.03 -9.67 119.42 3.00 3.00 0.00 MWD 2700.00 15.82 355.36 2689.75 138.80 -11.27 139.26 0.00 0.00 0.00 MWD 2800.00 15.82 355.36 2785.97 165.97 -13.48 166.52 0.00 0.00 0.00 MWD 2900.00 15.82 355.36 2882.18 193.14 -15.69 193.77 0.00 0.00 0.00 MWD 3000.00 15.82 355.36 2978.39 220.30 -17.89 221.03 0.00 0.00 0.00 MWD 3100.00 15.82 355.36 3074.61 247.47 -20.10 248.28 0.00 0.00 0.00 MWD 3200.00 15.82 355.36 3170.82 274.64 -22.30 275.54 0.00 0.00 0.00 MWD 3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD						57.39	-4.66	57.58	3.00	3.00		
2500.00 12.00 355.36 2496.26 88.56 -7.19 88.85 3.00 3.00 0.00 MWD 2600.00 15.00 355.36 2593.49 111.82 -9.08 112.19 3.00 3.00 0.00 MWD 2627.22 15.82 355.36 2619.73 119.03 -9.67 119.42 3.00 3.00 0.00 MWD 2700.00 15.82 355.36 2689.75 138.80 -11.27 139.26 0.00 0.00 0.00 MWD 2800.00 15.82 355.36 2785.97 165.97 -13.48 166.52 0.00 0.00 0.00 MWD 2900.00 15.82 355.36 2882.18 193.14 -15.69 193.77 0.00 0.00 0.00 MWD 3000.00 15.82 355.36 2978.39 220.30 -17.89 221.03 0.00 0.00 0.00 MWD 3100.00 15.82 355.36 3074.61 247.47 -20.10 248.28 0.00 0.00 0.00 MWD 3200.00 15.82 355.36 3170.82 274.64 -22.30 275.54 0.00 0.00 MWD 3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD					2397.95	70.39	-5.72	70.63	3.00			
2600.00 15.00 355.36 2593.49 111.82 -9.08 112.19 3.00 3.00 0.00 MWD  2627.22 15.82 355.36 2619.73 119.03 -9.67 119.42 3.00 3.00 0.00 MWD  2700.00 15.82 355.36 2689.75 138.80 -11.27 139.26 0.00 0.00 0.00 MWD  2800.00 15.82 355.36 2785.97 165.97 -13.48 166.52 0.00 0.00 0.00 MWD  2900.00 15.82 355.36 2882.18 193.14 -15.69 193.77 0.00 0.00 0.00 MWD  3000.00 15.82 355.36 2978.39 220.30 -17.89 221.03 0.00 0.00 0.00 MWD  3100.00 15.82 355.36 3074.61 247.47 -20.10 248.28 0.00 0.00 0.00 MWD  3200.00 15.82 355.36 3170.82 274.64 -22.30 275.54 0.00 0.00 0.00 MWD  3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD					2496.26	88.56	-7.19	88.85	3.00			
2700.00 15.82 355.36 2689.75 138.80 -11.27 139.26 0.00 0.00 0.00 MWD 2800.00 15.82 355.36 2785.97 165.97 -13.48 166.52 0.00 0.00 0.00 MWD 2900.00 15.82 355.36 2882.18 193.14 -15.69 193.77 0.00 0.00 0.00 MWD 3000.00 15.82 355.36 2978.39 220.30 -17.89 221.03 0.00 0.00 0.00 MWD 3100.00 15.82 355.36 3074.61 247.47 -20.10 248.28 0.00 0.00 0.00 MWD 3200.00 15.82 355.36 3170.82 274.64 -22.30 275.54 0.00 0.00 0.00 MWD 3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD	١	2600.00	15.00	355.36	2593.49	111.82	-9.08	112.19				
2700.00 15.82 355.36 2689.75 138.80 -11.27 139.26 0.00 0.00 0.00 MWD 2800.00 15.82 355.36 2785.97 165.97 -13.48 166.52 0.00 0.00 0.00 MWD 2900.00 15.82 355.36 2882.18 193.14 -15.69 193.77 0.00 0.00 0.00 MWD 3000.00 15.82 355.36 2978.39 220.30 -17.89 221.03 0.00 0.00 0.00 MWD 3100.00 15.82 355.36 3074.61 247.47 -20.10 248.28 0.00 0.00 0.00 MWD 3200.00 15.82 355.36 3170.82 274.64 -22.30 275.54 0.00 0.00 0.00 MWD 3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD		2627.22	15.82	355 36	2619 73	119.03	-0.67	110.42	2.00	2.00	0.00	MACO
2800.00 15.82 355.36 2785.97 165.97 -13.48 166.52 0.00 0.00 0.00 MWD 2900.00 15.82 355.36 2882.18 193.14 -15.69 193.77 0.00 0.00 0.00 MWD 3000.00 15.82 355.36 2978.39 220.30 -17.89 221.03 0.00 0.00 0.00 MWD 3100.00 15.82 355.36 3074.61 247.47 -20.10 248.28 0.00 0.00 0.00 MWD 3200.00 15.82 355.36 3170.82 274.64 -22.30 275.54 0.00 0.00 0.00 MWD 3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD												
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3000.00 15.82 355.36 2978.39 220.30 -17.89 221.03 0.00 0.00 0.00 MWD  3100.00 15.82 355.36 3074.61 247.47 -20.10 248.28 0.00 0.00 0.00 MWD  3200.00 15.82 355.36 3170.82 274.64 -22.30 275.54 0.00 0.00 MWD  3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD												
3100.00 15.82 355.36 3074.61 247.47 -20.10 248.28 0.00 0.00 0.00 MWD 3200.00 15.82 355.36 3170.82 274.64 -22.30 275.54 0.00 0.00 0.00 MWD 3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD												
3200.00 15.82 355.36 3170.82 274.64 -22.30 275.54 0.00 0.00 0.00 MWD 3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD		5500.00	13.02	JJJ.JU	2310.33	220.30	-17.89	221.03	0.00	0.00	0.00	MWD
3200.00 15.82 355.36 3170.82 274.64 -22.30 275.54 0.00 0.00 0.00 MWD 3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD						247.47	-20.10	248.28	0.00	0.00	0.00	MWD
3300.00 15.82 355.36 3267.03 301.80 -24.51 302.80 0.00 0.00 0.00 MWD					3170.82	274.64	-22.30					
0400.00 45.00 055.00				355.36	3267.03	301.80	-24.51					
			15.82	355.36	3363.25	328.97	-26.72	330.05	0.00	0.00	0.00	MWD
3500.00 15.82 355.36 3459.46 356.14 -28.92 357.31 0.00 0.00 0.00 MWD		3500.00	15.82	355.36	3459.46							

## **Weatherford International Planning Report**



Page:

Company: Wolverine Gas & Oil Co of Utah Field: Sevier County, Utah Site: Pad A-2

17-6(F) 1 Well:

Wellpath:

Date: 3/29/2005 Time: 07:29:49 Co-ordinate(NE) Reference: Well: 17-6(F), True North

Vertical (TVD) Reference:

SITE 0.0 User (0.00N,0.00E,355.36Azi) 17-6 (F slot) version 3

Section (VS) Reference: Plan:

Survey										
MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	bearing	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
3600.00	15.82	355.36	3555.68	383.30	-31.13	384.56	0.00	0.00	0.00	MWD
3700.00	15.82	355.36	3651.89	410.47	-33.34	411.82	0.00	0.00	0.00	MWD
3800.00	15.82	355.36	3748.10	437.64	-35.54	439.08	0.00	0.00	0.00	MWD
3900.00	15.82	355.36	3844.32	464.80	-37.75	466.33	0.00	0.00	0.00	MWD
4000.00	15.82	355.36	3940.53	491.97	-39.95	493.59	0.00	0.00	0.00	MWD
4100.00	15.82	355.36	4036.75	519.14	-42.16	520.84	0.00	0.00	0.00	MWD
4200.00	15.82	355.36	4132.96	546.30	-44.37	548.10	0.00	0.00	0.00	MWD
4300.00	15.82	355.36	4229.17	573.47	-46.57	575.36	0.00	0.00	0.00	MWD
4400.00	15.82	355.36	4325.39	600.63	-48.78	602.61	0.00	0.00	0.00	MWD
4500.00	15.82	355.36	4421.60	627.80	-50.99	629.87	0.00	0.00	0.00	MWD
4600.00	15.82	355.36	4517.81	654.97	-53.19	657.12	0.00	0.00	0.00	MWD
4700.00	15.82	355.36	4614.03	682.13	-55.40	684.38	0.00	0.00	0.00	MWD
4800.00	15.82	355.36	4710.24	709.30	-57.60	711.64	0.00	0.00	0.00	MWD
4900.00	15.82	355.36	4806.46	736.47	-59.81	738.89	0.00	0.00	0.00	MWD
5000.00	15.82	355.36	4902.67	763.63	-62.02	766.15	0.00	0.00	0.00	MWD
5100.00	15.82	355.36	4998.88	790.80	-64.22	793.41	0.00	0.00	0.00	MWD
5200.00	15.82	355.36	5095.10	817.97	-66.43	820.66	0.00	0.00	0.00	MWD
5300.00	15.82	355.36	5191.31	845.13	-68.64	847.92	0.00	0.00	0.00	MWD
5400.00	15.82	355.36	5287.53	872.30	-70.84	875.17	0.00	0.00	0.00	MWD
5500.00	15.82	355.36	5383.74	899.47	-73.05	902.43	0.00	0.00	0.00	MWD
5600.00	15.82	355.36	5479.95	926.63	-75.26	929.69	0.00	0.00	0.00	MWD
5685.74	15.82	355.36	5562.45	949.93	-77.15	953.05	0.00	0.00	0.00	MWD
5700.00	15.39	355.36	5576.18	953.75	-77.46	956.89	3.00	-3.00	0.00	MWD
5800.00	12.39	355.36	5673.25	977.67	-79.40	980.89	3.00	-3.00	0.00	MWD
5842.65	11.11	355.36	5715.00	986.33	-80.10	989.58	3.00	-3.00	0.00	TCRK
5900.00	9.39	355.36	5771.44	996.50	-80.93	999.78	3.00	-3.00	0.00	MWD
5979.38	7.01	355.36	5850.00	1007.78	-81.85	1011.10	3.00	-3.00	0.00	9 5/8" casing
6000.00	6.39	355.36	5870.48	1010.18	-82.04	1013.50	3.00	-3.00	0.00	MWD
6100.00	3.39	355.36	5970.10	1018.67	-82.73	1022.03	3.00	-3.00	0.00	MWD
6200.00	0.39	355.36	6070.04	1021.96	-83.00	1025.32	3.00	-3.00	0.00	MWD
6212.96	0.00	355.36	6083.00	1022.00	-83.00	1025.36	3.00	-3.00	0.00	NVJ01 660' FNL & 1925' F
6300.00	0.00	355.36	6170.04	1022.00	-83.00	1025.36	0.00	0.00	0.00	MWD
6400.00	0.00	355.36	6270.04	1022.00	-83.00	1025.36	0.00	0.00	0.00	MWD
6470.96	0.00	355.36	6341.00	1022.00	-83.00	1025.36	0.00	0.00	0.00	OWC
6500.00	0.00	355.36	6370.04	1022.00	-83.00	1025.36	0.00	0.00	0.00	MWD
6600.00	0.00	355.36	6470.04	1022.00	-83.00	1025.36	0.00	0.00	0.00	MWD
6700.00	0.00	355.36	6570.04	1022.00	-83.00	1025.36	0.00	0.00	0.00	MWD
6770.96	0.00	355.36	6641.00	1022.00	-83.00	1025.36	0.00	0.00	0.00	7" casing

Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W	Map Northing ft	Map Easting ft	< Latitude> Deg Min Sec	< Longitude Deg Min Sec
	FNL & 1925' FWL e (330x330)	6083.00	1022.00	-83.00	6734954.39	1516614.06	38 48 29.561 N	111 56 3.927 W

Casi	ng	Point	S

MD ft	TVD ft	Diameter in	Hole Size in	Name		
120.00	120.00	20.000	26.000	20" casing		
2000.62	2000.00	13.375	17.500	13-3/8" casing		
5979.38	5850.00	9.625	12.250	9 5/8" casing	 	

## **Weatherford International Planning Report**



Page:

Company: Wolverine Gas & Oil Co of Utah

Field: Sevier County, Utah

Site:

Pad A-2 17-6(F) Well: Wellpath: 1

Date: 3/29/2005 Time: 07:29:49 Co-ordinate(NE) Reference: Well: 17-6(F), True North

Vertical (TVD) Reference: SITE 0.0

User (0.00N,0.00E,355.36Azi) 17-6 (F slot) version 3 Section (VS) Reference:

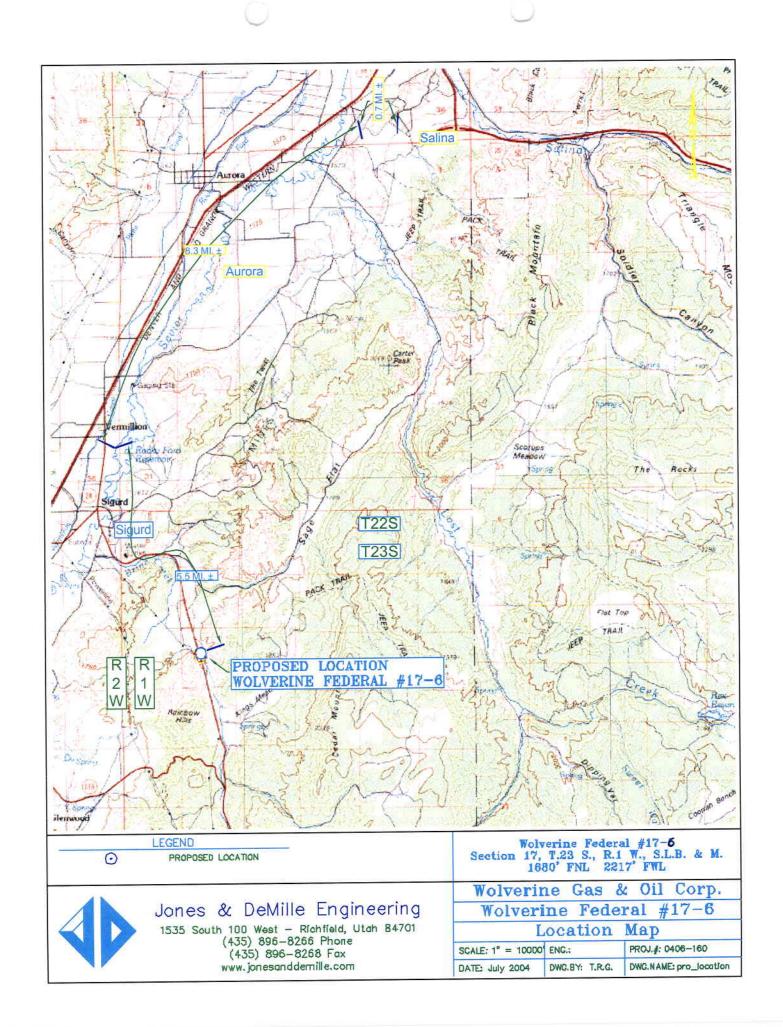
Plan:

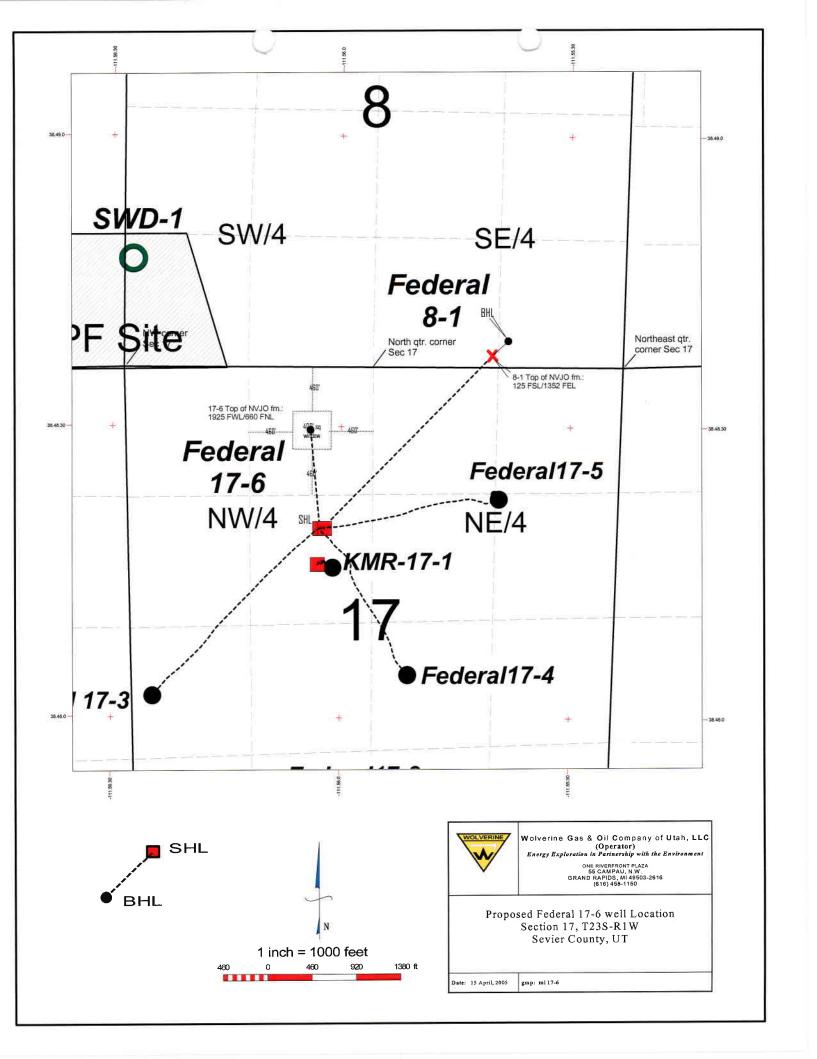
**Casing Points** 

MD ft	TVD ft	Diameter in	Hole Size in	Name	
6770.96	6641.00	7.000	8.500	7" casing	

#### **Formations**

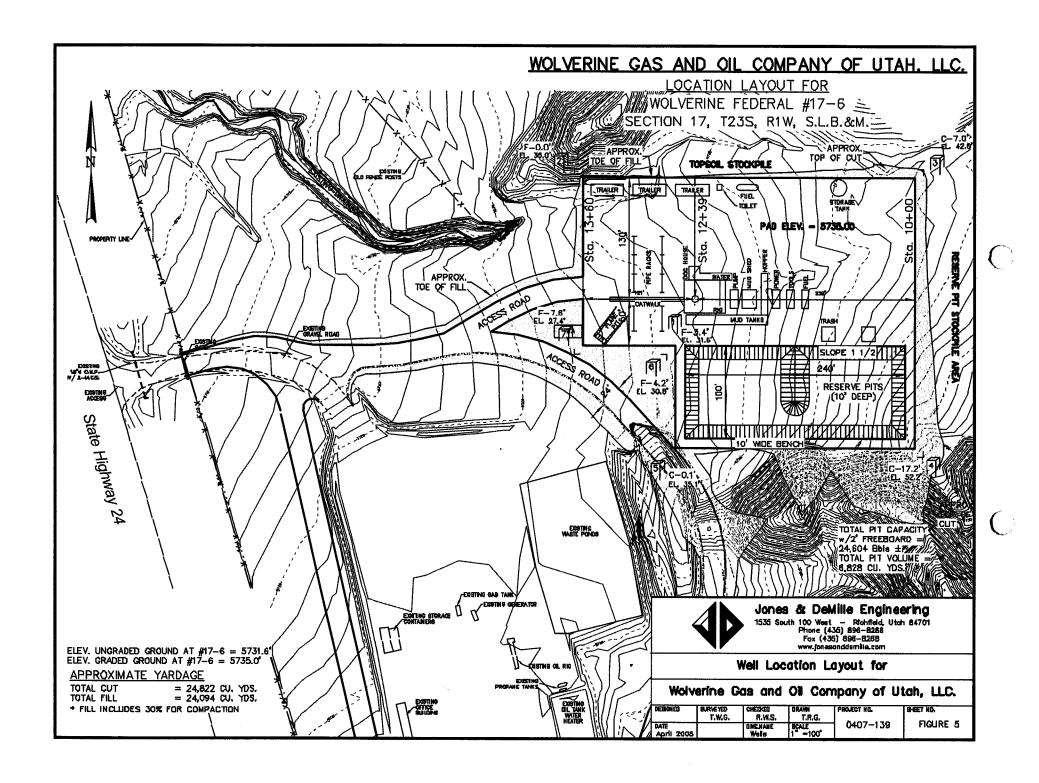
MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction bearing
5842.65	5715.00	TCRK		0.00	0.00
6212.96	6083.00	NVJO1		0.00	0.00
6470.96	6341.00	owc		0.00	0.00





Attachment B

• Well Location Layout Map



#### PRESSURE CONTROL SYSTEM SCHEMATIC

Prepared by: EXACT Engineering, Inc Tulsa, OK (918) 599-9400

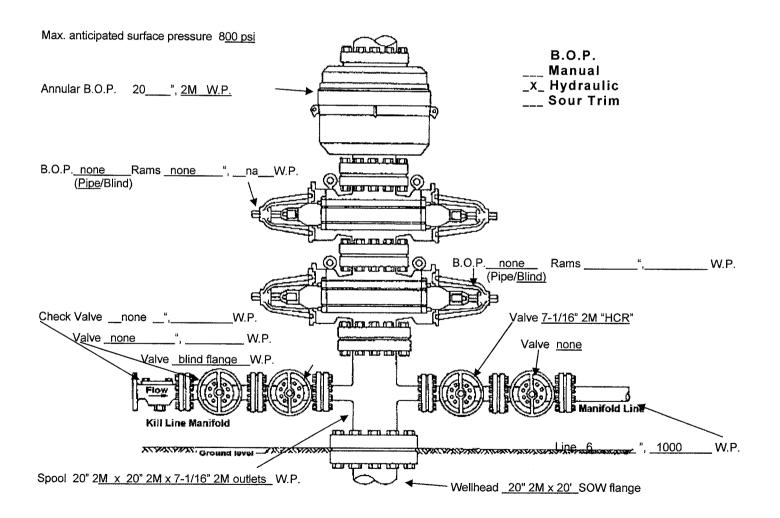
**2M Diverter Stack** — to be utilized while drilling holes for surface casing thru upper Arapien formation section

Operator:

Wolverine Gas & Oil Co. of Utah, LLC

Well name and number

Wolverine Federal # 17-6



#### PRESSURE CONTROL SYSTEM SCHEMATIC

Prepared by: EXACT Engineering, Inc Tulsa, OK (918) 599-9400

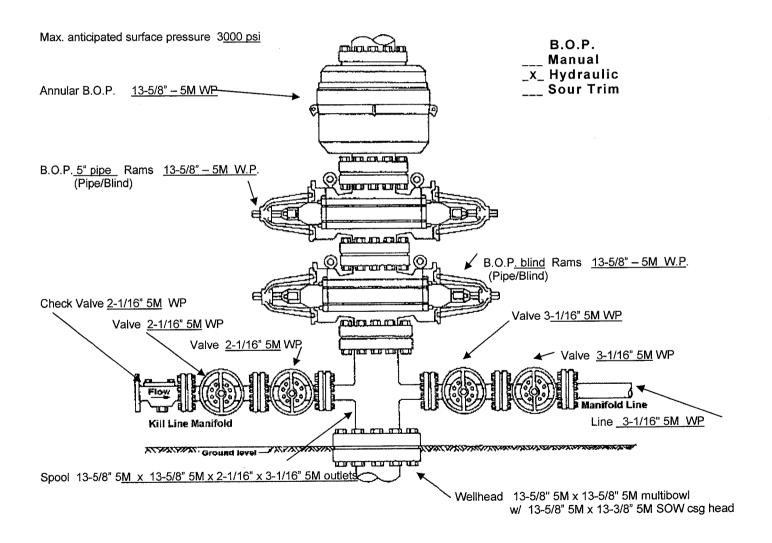
**5M BOP Stack** — to be utilized while drilling holes for protective and production casings thru lower Arapien, Twin Creek & Navajo intervals

Operator:

Wolverine Gas & Oil Co. of Utah, LLC

Well name and number

Wolverine Federal #17-6



### **APD Checklist**

# The APD shall include (please attach two copies if for State or Fee surface):

- 1. A completed and signed Form 3 (application to drill, deepen or reenter). Make sure all blanks are filled and boxes are checked.
- 2. X Contact information and phone number for surface owner.
- 3. X Location plat. (A Hachment A)
- 4. X Water Rights approval. (See Proj. Plzn of Dev.; )
- 5. K Estimated geologic markers. (See Drilling Plzn)
- 6.  $\underline{X}$  Estimated top and bottom of anticipated water, oil, gas, other mineral zones and plans for their protection. (See  $\underline{N}$ )
- 7. X Plan for pressure control (BOPE), including schematic and casing test. (See Drig Plan)
- 8. X Description of mud system, including mud weights. (See Drig Plan)
- 9. X Plans for testing, logging and coring. (See Drig Plan)
- 10. X Expected bottom hole pressure, any anticipated abnormal pressures, temperatures, or hazards and plans for mitigation of them. (See Drig Plan)
- 11.  $\times$  Casing design (size, type, weight). (Drlg flzn)
- 12. X Cement design (type, weight, yield, estimated top, # sacks). (See Orlg Plzw)
- 13. X Diagram of horizontal or directional well bore path including directional survey plan. (see Dieectruck Plan /pris plan)
- 14. <u>NA</u> Designation of agent if necessary.
- 15. <u>X</u> Bond. (BLM WY \$3229)
- 16. XNA Affidavit of Surface agreement. (Wolverine Gias & Oil owns surface Location)
- 17. NA Exception location application (if needed).

# An application for directional drilling shall also include:

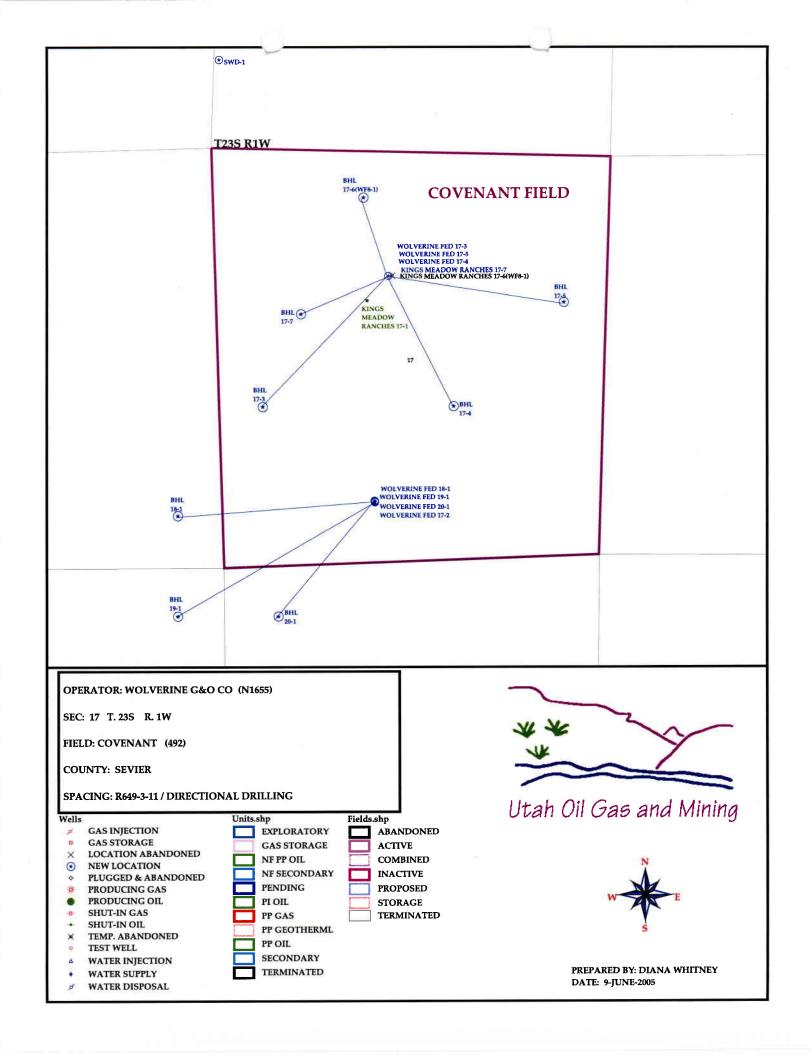
- 18. Yelat showing surface location, section and lease lines, target location, points along the well bore where owner consent has been obtained.
- 19. X Reason for deviation.

  (See Athacumed A

  (See PRO). Dev. Plan)

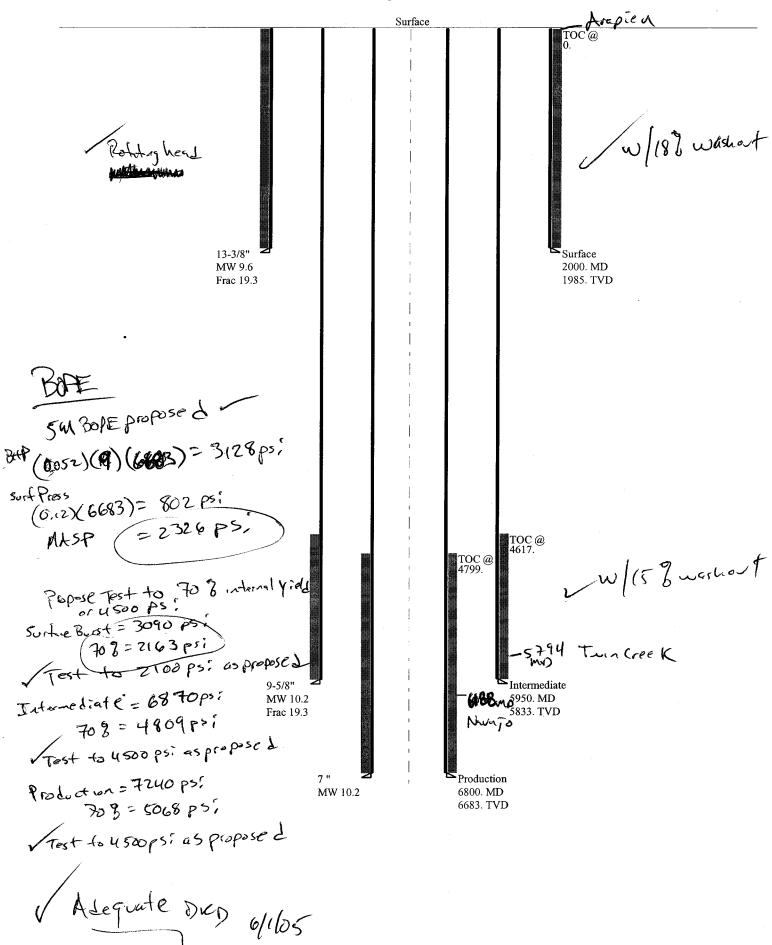
### APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 04/20/2005 AMEND	P NO. ASSIGNE	ED: 43-041-3004	0
WELL NAME: KINGS MEADOW RANCHES 17-7  OPERATOR: WOLVERINE GAS & OIL CO ( N1655 )  CONTACT: EDWARD HIGUERA	PHONE NUMBER: 61		
PROPOSED LOCATION:  SENW 17 230S 010W  SURFACE: 1680 FNL 2217 FWL  BOTTOM: 2204 FNL 1059 FWL  SEVIER  COVENANT ( 492 )  LEASE TYPE: 4 - Fee  LEASE NUMBER: FEE  SURFACE OWNER: 4 - Fee  PROPOSED FORMATION: NAVA  COALBED METHANE WELL? NO	INSPECT LOCATN  Tech Review  Engineering  Geology  Surface  LATITUDE: 38.8  LONGITUDE: -111	Initials 0554	Date
RECEIVED AND/OR REVIEWED:  Plat  Bond: Fed[] Ind[] Sta[] Fee[]  (No. 19107770 )  Potash (Y/N)  Oil Shale 190-5 (B) or 190-3 or 190-13  Water Permit  (No. 63-2529 )  RDCC Review (Y/N)  (Date: )  Fee Surf Agreement (Y/N)  Surface orner is Weirenee.	LOCATION AND SITE  R649-2-3.  Unit WOLVERINE  R649-3-2.  Siting: 460 F  R649-3-3.  Drilling Unit Board Cause Eff Date: Siting:  R649-3-11.	General From Qtr/Qtr & 920' Exception it e No:	
COMMENTS:  STIPULATIONS:			



# ○ 05-05 Wolverine KMR 17-7

Casing Schematic



05-05 Wolverine KMR 17-7

Operator:

Wolverine Gas & Oil

String type:

Location:

Surface

Sevier County

Project ID:

43-041-30040

Design parameters: Collapse

Mud weight:

9.600 ppg

Design is based on evacuated pipe.

Minimum design factors:

Collapse: Design factor

1.125

**Environment:** H2S considered?

No Surface temperature: 75 °F 103 °F Bottom hole temperature:

1.40 °F/100ft Temperature gradient: Minimum section length: 1,500 ft

Burst:

Design factor

1.00

1.80 (J)

1.80 (J)

1.60 (J)

Cement top:

Surface

1000 ft

155 ft

**Burst** 

Max anticipated surface

1,760 psi pressure: 0.120 psi/ft Internal gradient: 1,998 psi Calculated BHP

No backup mud specified.

**Tension:** 

8 Round STC: 8 Round LTC:

Buttress: Premium: Body yield:

1.50 (J) 1.50 (B)

Tension is based on buoved weight. 1,708 ft Neutral point:

Directional Info - Build & Drop

Kick-off point Departure at shoe:

Maximum dogleg: 2 °/100ft 13.55° Inclination at shoe:

Re subsequent strings:

Next setting depth:

5,871 ft 10.200 ppg Next mud weight: Next setting BHP: 3,111 psi Fracture mud wt: 19.250 ppg 2,000 ft

Fracture depth: 2,000 psi Injection pressure

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	2000	13.375	61.00	J-55	ST&C	1985	2000	12.39	242.9
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	990	1540	1.556	1998	3090	1.55	104	595	5.73 J

Prepared

Clinton Dworshak

Utah Div. of Oil & Mining

Phone: 801-538-5280

Date: June 1,2005 Salt Lake City, Utah

by: Remarks:

Collapse is based on a vertical depth of 1985 ft, a mud weight of 9.6 ppg The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

05-05 Wolverine KMR 17-7

Operator:

Wolverine Gas & Oil

String type:

Location:

Production

Sevier County

Project ID:

43-041-30040

**Environment:** 

Design parameters:

Collapse

Mud weight:

10.200 ppg

Design is based on evacuated pipe.

Minimum design factors:

Collapse: Design factor

1.125

H2S considered?

Surface temperature: Bottom hole temperature:

No 75 °F 169 °F

Temperature gradient:

1.40 °F/100ft

Minimum section length: 1,500 ft

**Burst:** 

Design factor

1.00

Cement top:

4.799 ft

**Burst** 

Max anticipated surface

2,739 psi pressure: Internal gradient: 0.120 psi/ft Calculated BHP

3,541 psi

No backup mud specified.

**Tension:** 

8 Round STC: 8 Round LTC:

Buttress: Premium: Body yield:

1.80 (J) 1.60 (J) 1.50 (J)

1.80 (J)

1.50 (B)

Directional Info - Build & Drop

1000 ft Kick-off point Departure at shoe: 1041 ft Maximum dogleg:

Inclination at shoe:

2 °/100ft

0°

Tension is based on buoyed weight. 5,771 ft Neutral point:

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	6800	. 7	26.00	N-80	LT&C	6683	6800	6.151	356.5
Run Seq	Collapse Load (psi) 3541	Collapse Strength (psi) 5410	Collapse Design Factor 1.528	Burst Load (psi) 3541	Burst Strength (psi) 7240	Burst Design Factor 2.04	Tension Load (Kips) 147	Tension Strength (Kips) 519	Tension Design Factor 3.53 J

Prepared

by:

Clinton Dworshak

Utah Div. of Oil & Mining

Phone: 801-538-5280

Date: June 1,2005 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 6683 ft, a mud weight of 10.2 ppg The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

05-05 Wolverine KMR 17-7

Operator:

Wolverine Gas & Oil

String type:

Intermediate

Project ID:

Location:

Sevier County

43-041-30040

Injection pressure

5,688 psi

Design parameters: Collapse Mud weight: Design is based on evacu	10.200 ppg uated pipe.	Minimum design Collapse: Design factor	<b>factors:</b> 1.125	Environment: H2S considered? Surface temperature: Bottom hole temperature Temperature gradient:	No 75 °F :: 157 °F 1.40 °F/100ft
	*			Minimum section length:	
		Burst: Design factor	1.00	Cement top:	4,617 ft
<u>Burst</u>					
Max anticipated surface	2,722 psi				
pressure: Internal gradient:	0.120 psi/ft	Tension:		Directional Info - Build &	Drop
Calculated BHP	3,422 psi	8 Round STC:	1.80 (J)	Kick-off point	1000 ft
	-	8 Round LTC:	1.80 (J)	Departure at shoe:	1036 ft
No backup mud specified	•	Buttress:	1.60 (J)	Maximum dogleg:	2 °/100ft
		Premium:	1.50 (J)	Inclination at shoe:	3.35 °
		Body yield:	1.50 (B)	Re subsequent strings	
				Next setting depth:	6,641 ft
		Tension is based on	, ,	Next mud weight:	10.200 ppg
		Neutral point:	5,040 ft	Next setting BHP:	3,519 psi
				Fracture mud wt:	19.250 ppg
				Fracture depth:	5,688 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	5950	9.625	47.00	N-80	LT&C	5833	5950	8.625	560.8
Run Seq	Collapse Load (psi) 3091	Collapse Strength (psi) 4689	Collapse Design Factor 1.517	Burst Load (psi) 3422	Burst Strength (psi) 6870	Burst Design Factor 2.01	Tension Load (Kips) 232	Tension Strength (Kips) 905	Tension Design Factor 3.90 J

Prepared

Clinton Dworshak

Utah Div. of Oil & Mining

Phone: 801-538-5280

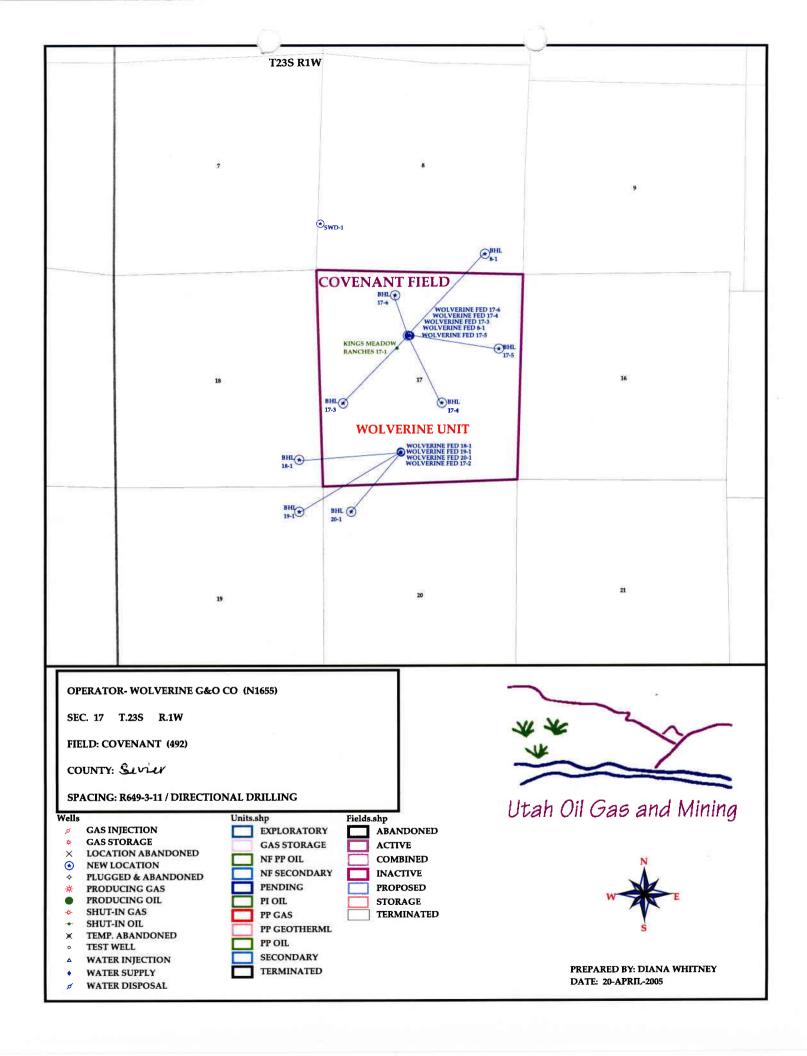
Date: June 1,2005 Salt Lake City, Utah

Collapse is based on a vertical depth of 5833 ft, a mud weight of 10.2 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

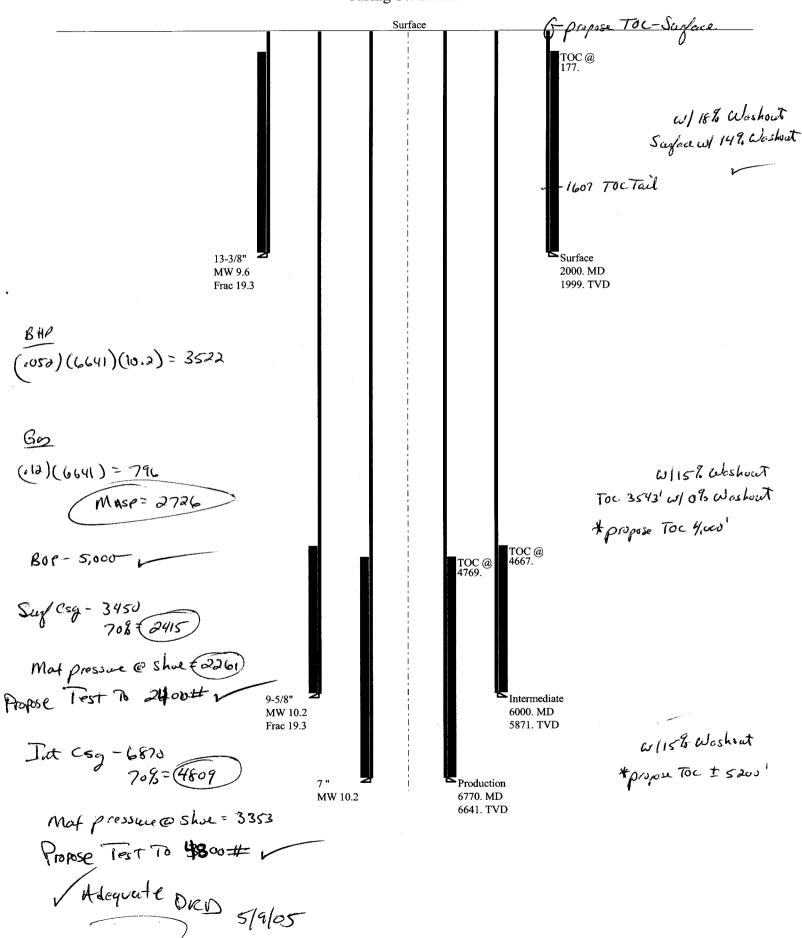
# WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 04/20/2005	API NO. ASSIGN	IED: 43-041-300	40
WELL NAME: WOLVERINE GAS & OIL CO ( N1655 )  CONTACT: ED WARD HIGUERA  PROPOSED LOCATION:  SENW 17 230S 010W  SURFACE: 1680 FNL 2217 FWL BOTTOM: 0660 FNL 1925 FWL  SEVIER COVENANT ( 492 )  LEASE TYPE: 4 - Fee LEASE NUMBER: FEE	PHONE NUMBER: 6  INSPECT LOCATI  Tech Review  Engineering  Geology  Surface	516-458-1150	Date 5/9/05
SURFACE OWNER: 4 - Fee PROPOSED FORMATION: NAVA COALBED METHANE WELL? NO		30554	
Plat  Bond: Fed[] Ind[] Sta[] Fee[]  (No. 19107754 )  Potash (Y/N)  N Oil Shale 190-5 (B) or 190-3 or 190-13  Water Permit  (No. 13-2529 )  RDCC Review (Y/N)  (Date: )  Fee Surf Agreement (Y/N)  Weivenne is Surface owner	LOCATION AND SIT  R649-2-3.  Unit WOLVERINE *  R649-3-2.  Siting: 460 1  R649-3-3.  Drilling Un  Board Caus  Eff Date:  Siting:  R649-3-11.	General From Qtr/Qtr & 920 ( Exception it e No:	
.0	acing Stip	P BASIS	



# ○ 05-05 Wolverine KMR 17 ○

Casing Schematic



05-05 Wolverine KMR 17-6

Operator:

Wolverine Gas & Oil

String type:

Surface

Location:

Sevier County

Project ID:

43-041-30040

1.80 (J)

1.80 (J)

Design parameters: Collapse: H2S considered? No Collapse 75 °F Mud weight: 9.600 ppg Design factor 1.125 Surface temperature: 103 °F Bottom hole temperature: Design is based on evacuated pipe.

1.40 °F/100ft Temperature gradient:

Minimum section length: 1,500 ft

**Burst:** 

Design factor 1.00 Cement top:

177 ft

**Burst** 

Max anticipated surface

No backup mud specified.

pressure: 1,760 psi 0.120 psi/ft Internal gradient: Calculated BHP 2,000 psi

**Tension:** 8 Round STC:

8 Round LTC: Buttress:

1.60 (J) 1.50 (J) Premium: Body yield: 1.50 (B)

Tension is based on buoyed weight. 1,715 ft Neutral point:

Directional well information:

Kick-off point 0 ft Departure at shoe: 40 ft .16 °/100ft Maximum dogleg: Inclination at shoe: 2.68°

Re subsequent strings:

Next setting depth: 5,871 ft Next mud weight:

10.200 ppg Next setting BHP: 3,111 psi Fracture mud wt: 19.250 ppg 2,000 ft Fracture depth: 2,000 psi Injection pressure

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	2000	13.375	68.00	J-55	Buttress	1999	2000	12.29	270.1
Run Seq	Collapse Load (psi) 997	Collapse Strength (psi) 1946	Collapse Design Factor 1.951	Burst Load (psi) 2000	Burst Strength (psi) 3450	Burst Design Factor 1.73	Tension Load (Kips) 117	Tension Strength (Kips) 1069	Tension Design Factor 9.17 B

Prepared

Clinton Dworshak

Utah Div. of Oil & Mining

Phone: 801-538-5280

Date: May 4,2005 Salt Lake City, Utah

by: Remarks:

Collapse is based on a vertical depth of 1999 ft, a mud weight of 9.6 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

05-05 Wolverine KMR 17-6

Operator:

Wolverine Gas & Oil

String type:

Intermediate

Project ID:

43-041-30040

\_ocation:

Sevier County

Minimum design factors:

1.80 (J)

**Collapse** 

Mud weight:

Design parameters:

10.200 ppg Design is based on evacuated pipe.

Collapse:

Design factor 1.125 **Environment:** 

H2S considered? Surface temperature:

Νo 75 °F 157 °F

Bottom hole temperature: Temperature gradient:

1.40 °F/100ft

Minimum section length: 1,500 ft

**Burst:** 

Design factor

1.00 Cement top: 4,667 ft

**Burst** 

Max anticipated surface

pressure: 2,722 psi Internal gradient: 0.120 psi/ft Calculated BHP 3,427 psi

No backup mud specified.

Tension:

8 Round STC:

Premium:

8 Round LTC: **Buttress:** 

Body yield:

1.80 (J) 1.60 (J) 1.50 (J)

1.50 (B)

Tension is based on buoyed weight. 5,073 ft Neutral point:

Directional well information:

Kick-off point Departure at shoe:

Maximum dogleg:

1008 ft 3.7 °/100ft 4.19°

0 ft

Inclination at shoe: Re subsequent strings:

Next setting depth: 6,641 ft

Next mud weight: Next setting BHP:

10.200 ppg 3,519 psi Fracture mud wt: 19.250 ppg 5,688 ft Fracture depth: 5,688 psi Injection pressure

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	6000	9.625	47.00	N-80	LT&C	5871	6000	8.625	565.5
Run Seq	Collapse Load (psi) 3111	Collapse Strength (psi) 4619	Collapse Design Factor 1.485	Burst Load (psi) 3427	Burst Strength (psi) 6870	Burst Design Factor 2.00	Tension Load (Kips) 234	Tension Strength (Kips) 905	Tension Design Factor 3.87 J

Prepared

Clinton Dworshak

Utah Div. of Oil & Mining

Phone: 801-538-5280

Date: May 4,2005 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 5871 ft, a mud weight of 10.2 ppg The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Engineering responsibility for use of this design will be that of the purchaser.

05-05 Wolverine KMR 17-6

Operator:

Wolverine Gas & Oil

String type:

Production

Project ID:

43-041-30040

Location:

Sevier County

Design parameters:

**Collapse** 

Mud weight:

10.200 ppg

Design is based on evacuated pipe.

Minimum design factors: Collapse:

Design factor 1.125 **Environment:** 

H2S considered?

No

Surface temperature: Bottom hole temperature:

75 °F 168 °F

Temperature gradient:

1.40 °F/100ft

Minimum section length: 1,500 ft

**Burst:** 

Design factor

1.00 Cement top: 4,769 ft

**Burst** 

Max anticipated surface

No backup mud specified. .

pressure:

2,722 psi 0.120 psi/ft

Internal gradient: Calculated BHP

3,519 psi

Tension:

8 Round STC:

8 Round LTC:

Buttress:

1.60 (J) Premium:

1.50 (J) 1.50 (B)

1.80 (J)

1.80 (J)

Directional well information:

Kick-off point Departure at shoe:

0 ft 1012 ft

Maximum dogleg: Inclination at shoe: 3.7 °/100ft 0°

Body yield:

Tension is based on buoyed weight. 5,745 ft Neutral point:

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	6770	` 7	26.00	N-80	LT&C	6641	6770	6.151	354.9
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (Kips)	Tension Strength (Kips)	Tension Design Factor
1	3519	5410	1.537	3519	7240	2.06	146	519	3.55 J

Prepared

Clinton Dworshak

Utah Div. of Oil & Mining

Phone: 801-538-5280

Date: May 4,2005 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 6641 ft, a mud weight of 10.2 ppg The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Engineering responsibility for use of this design will be that of the purchaser.



# WOLVERINE GAS AND OIL COMPANY

of Utah, LLC

Energy Exploration in Partnership with the Environment

April 26 2005

Ms. Diana Whitney Utah Division of Oil, Gas & Mining 1594 W. N. Temple, Suite 1210 Salt Lake City, UT 84114-5801 RECEIVED
APR 2 / 2005

DIV. OF OIL, GAS & MINING

RE:

Application for Permit to Drill Kings Meadows Ranches #17-6 Covenant Field, Sevier County, UT

Dear Ms. Whitney:

The purpose of this letter is to supplement the information originally submitted for the Kings Meadow Ranch 17-6, which we had inadvertently called the Wolverine Federal 17-6 in our original correspondence. Enclosed with this letter is the revised Form 3, which corrects the name reference and the bond number. We have modified the *Project Plan of Development* to include the name of the surface owner and contact information on page 6, as you requested; I have signed this document, as well.

Water used in the drilling operation comes from our produced water from the KMR 17-1 and the Wolverine Federal 17-2, or when we need fresh water, we purchase it from Kings Meadow Ranches. We do not have a water supply well on the well site. A copy of water use permit is attached to this letter.

We are requesting an exception to Rule 649-3-11, *Directional Drilling*. The proposed Kings Meadow Ranch 17-6 is proposed as a directional well because land use considerations and because we wanted to minimize the footprint of our operations. The well will be drilled from the same pad as the previous wells (17-3, 17-4, 17-5 and 8-1). The well will reach the Navajo at a bottom hole location of 1925' FWL and 660' FNL (see map submitted previously). Wolverine Gas & Oil owns the mineral leases for the entire trajectory of the well bore and 460' radius of the wellbore.

If you need anything else, please call.

Sincerely,

Edward A. Higuera

Manager-Development

Encl.

# CONFIDENTIAL

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

APR 2 / 2005

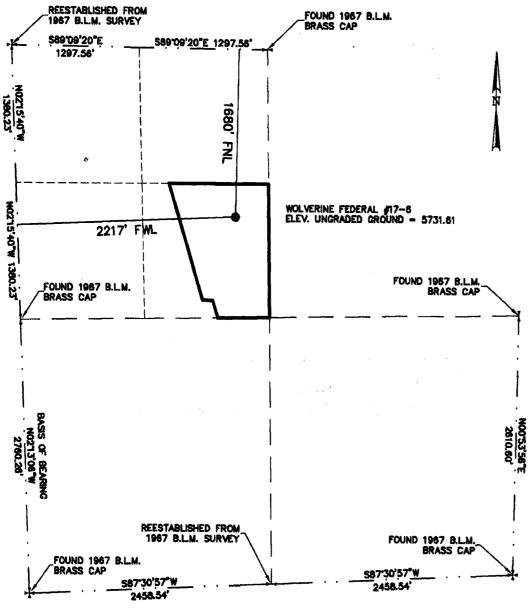
ECEIVED

FORM 3

AMENDED REPORT 🗹

001					DIV. OF	OIL.	GAS & MINING	ght changes)
	A	PPLICA	TION FOR I	PERMIT TO			5. MINERAL LEASE NO: Private	6. SURFACE: Fee
1A. TYPE OF WO	DRK: DF	RILL 🔽	REENTER	DEEPEN			7. IF INDIAN, ALLOTTEE OF	R TRIBE NAME:
B. TYPE OF WE	LL: OIL 📝	GAS 🗌	OTHER	SING	GLE ZONE MULTIPLE ZON	Ē□Ì	8. UNIT or CA AGREEMENT	NAME:
2. NAME OF OPE				·····			9. WELL NAME and NUMBE	R:
	Gas & Oil Co	ompany of	Utah, LLC				Kings Meadow F	
3. ADDRESS OF 55 Campau		Gran	d Rapids <sub>stat</sub>	MI 498	PHONE NUMBER: (616) 458-1150		10. FIELD AND POOL, OR V	WILDCAT:
•	WELL (FOOTAGES		SIAI	E ZIP	(0.00)		11. QTR/QTR, SECTION, TO MERIDIAN:	OWNSHIP, RANGE,
AT SURFACE:	1680' FNL	& 2217' FV	VL, Sec. 17 T2	23S-R01W				S 01W
AT PROPOSED	PRODUCING ZON	⊫: 660' FN	IL & 1925' FW	L, Sec. 17 T2	3S-R01W			
14. DISTANCE IN	MILES AND DIREC	CTION FROM NE	AREST TOWN OR POS	ST OFFICE:			12. COUNTY:	13. STATE: UTAH
3.5 miles	south of Sig	gurd					Sevier	UIAH
15. DISTANCE TO	NEAREST PROP	ERTY OR LEASE	LINE (FEET)	16. NUMBER OF	ACRES IN LEASE:	17. NI	JMBER OF ACRES ASSIGNE	
500' west					160			40
APPLIED FOR	O NEAREST WELL R) ON THIS LEASE	(FEET)	IPLETED, OR	19. PROPOSED			OND DESCRIPTION:	
	approx 1500's (show whether		····	22 APPROXIMA	6,770		ending STIMATED DURATION:	
5753' KB	(SHOW WHETHER	CDF, KI, GK, LI	o. <i>j</i> .	5/18/200			days	
<u> </u>								
24.	· · · · · · · · · · · · · · · · · · ·				ND CEMENTING PROGRAM			
SIZE OF HOLE			IGHT PER FOOT	SETTING DEPTH		ANTITY,	YIELD, AND SLURRY WEIGH	11
30"	20	X42	.25" wall	120	conductor			
17-1/2"	13-3/8"	J55	68 ppf	2,000	Lead: 500 sx hi-fill		cf/sx 11.0 pp	-
					Tail: 450 sx Prem.G		cf/sx 15.8 pp	
12-1/4"	9-5/8"	N80	47 ppf	6,000	450 sx 50:50 Poz	1.71	cf/sx 13 pp	
8-1/2"	7"	N80	26 ppf	6,770	400 sx 50:50 Poz	1.27	cf/sx 14.35 pp	og
		-						
25.				ATTA	CHMENTS			
VERIFY THE FOI	LLOWING ARE ATT	ACHED IN ACCO	ORDANCE WITH THE U	JTAH OIL AND GAS C	ONSERVATION GENERAL RULES:			
[ <b>7</b> ]				NONEED	COMPLETE DRILLING PLAN			
_			SED SURVEYOR OR E		1 =		OR COMPANY OTHER THAN	THE LEASE OWNER
<b>✓</b> EVIDENO	CE OF DIVISION OF	WATER RIGHT	S APPROVAL FOR US	E OF WATER	FORM 5, IF OPERATOR IS PE	:KSON C	OR COMPANY OTHER THAN	THE LEASE OWNER
				/				
NAME (PLEASE	PRINT) Edwar	d A Higuer	))n. 1		тітье Manager-Deve	elopn	nent	
SIGNATURE	Taer	Dil	LOS	>	DATE 4/26/2005			
(This space for Sta	ote use onto				)			
(Time space for Sta	ne use omy)			. V		Don	oved by the	oute of the same
	11.	. 644	216168		Together the state of the state	Jtah	Division of	
API NUMBER AS	SIGNED: 43	041-	36040		APPROVAL:	, Ga	s and Mining	<b>要</b> <b>确</b> 写
					Date: C	25	-08-105/	± :
(11/2001)				(See Instruction	ons on Reverse Side)		Dia DIV	

# Section 17, T.23 S., R.1 W., S.L.B. & M.



#### BASIS OF BEARINGS

BASIS OF BEARING USED WAS NO2"3'06"W BETWEEN THE SOUTHWEST CORNER AND THE WEST QUARTER CORNER OF SECTION 17, T.23 S., R.1 W., S.LB. & M.

LATITUDE = 38'48'19.4800" (38.805405556) LONGITUDE = -111'56'02.8792" (111.93413311)

#### **PROJECT**

### Wolverine Gas & Oil Company of Utah. LLC.

WELL LOCATION, LOCATED AS SHOWN IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY, UTAH

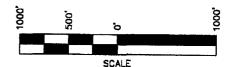
#### LEGEND

- SECTION CORNERS LOCATED
- QUARTER SECTION CORNERS LOCATED
- PROPOSED WELL HEAD

NOTE: THE PURPOSE OF THIS SURVEY WAS TO PLAT THE WOLVERINE FEDERAL \$17-6 LOCATION. LOCATED IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY.

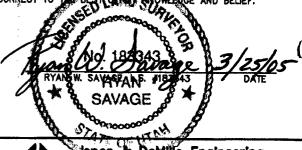
#### BASIS OF ELEVATION

ELEVATION BASED ON U.S.G.S. BENCH MARK LOCATED IN THE SW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.



#### **CERTIFICATE**

THIS IS TO CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION, MEETING THAT THE SAME ARE TRUE AND CORRECT TO THE BEST CENTS KNOWLEGGE AND BELIEF.





### Jones & DeMille Engineering

1535 South 100 West — Richfield, Utah 84701 Phone (435) 898-8266 Fax (435) 898-8268 www.bonesanddemilis.com

#### Well Location Plat for

Wolverine Gas & Oil Company of Utah. LLC.

DESIGNED	SURVEYED	CHECKED	DRAWN	PROJECT NO.	SHEET NO.
	T.W.G.	R.W.S.	K.B.B.		1
DATE		DWG.NAME	SCALE	1 0406-160	1 1
Mar. 2005		Wells	1" =1000"	1	1

# DIVISION OF OIL, GAS AND MINING APPLICATION FOR PERMIT TO DRILL STATEMENT OF BASIS

OPERATOR:	Wolverine Gas and Oil Company	
WELL NAME & NUMBER:	Kings Meadow Ranches 17-6	
API NUMBER:	43-041-30040	
I OCATION: 1/4 1/4 SENW SA	c: 17 TWP: 23 S. RNG: 1 W. 1680 FNI 2217 FWI	

#### **Geology/Ground Water:**

This location is placed in the High Plateaus section of the Colorado Plateau physiographic province in western central Utah. Some people have characterized this area as being in the Basin and Range - Colorado Plateau transition zone. It is other wise characterized as being astride the Sevier Overthrust Belt. The location is on fee acreage a few miles east of the Sevier River, in the Peterson Creek drainage, a tributary of Brine Creek, which subsequently flows into the Sevier River. The surface owner rancher heavily allocates water for agriculture derived from water rights on some local springs, which arise from the volcanic rocks just to the east.

The well will likely spud into a thin alluvium covering the evaporite-rich Jurassic-age Arapien Shale. The proposal calls for a saturated salt mud system from below the surface casing into the Navajo Sandstone. The quality of any surface water that manages to escape upstream allocation is diminished as it flows past the location and into Brine Creek, owing to the evaporite minerals in the Arapien Shale. Any water contained in the Arapien Shale is also likely to be of poor quality. A Division of Water Rights publication notes that aquifers in close proximity to the Arapien Shale are also likely to contain ground water with high TDS levels. Inasmuch as there do not appear to be any intervening aquifers documented in this area, which lie between the Arapien Shale and the underlying Navajo Sandstone, it is unlikely that any high quality ground water will be encountered.

At this location it is unlikely that any high quality ground water resource will be encountered in the Navajo, at that depth, in any strata drilled below the Navajo or at all. The proposed casing, cementing and drilling fluid program should be sufficient to control and isolate the poor quality ground waters expected to be encountered in a well at this location. Two surface water rights, a point-to-point right and two underground water rights (one filed by the Operator) are found within a mile to the east. The underground water right is for a 156' deep well more than half a mile east.

Reviewer: Christopher J. Kierst Date: May 3, 2005

#### Surface:

The original onsite for this well was held on September 7, 2004. Shaun Burd, Western Land Services, represented Wolverine Gas and Oil, while Ed Bonner was in attendance, representing the possible SITLA royalty interest. Sevier County was invited but chose not to attend this on-site evaluation. Proposed location is ~3.5 miles south of Sigurd, in Sevier County, Utah. Staked location lies east of Highway 24 on Wolverine Gas and Oil Company owned property. Steep hills surround the sagebrush dominated flat from which the well is proposed to be drilled. Access to this well will be along existing Wolverine oil field roads from UDOT maintained roads. No new access road will be built for this location, as it will utilize existing access. The direct area drains to the northwest, into Brine Creek then further west eventually into the Sevier River, a year-round live water source ~2.5 miles northwest of the proposed location. Dry washes run throughout the area. I have visited this location many times performing inspections during the drilling phase of the previously drilled wells (4) on this location. The reserve pit is lined and currently in good condition. Reserve pit volume may become an issue depending on drilling conditions. I have spoken with Steve Hash (Exact Engineering) regarding this issue. If pit volume becomes an issue, due to cuttings, Wolverine will contact the Division for approval and stipulations for enlarging the reserve pit, prior to construction.

Reviewer: Mark L. Jones Date: April 25, 2005

# ON-SITE PREDRILL EVALUATION Division of Oil, Gas and Mining

**OPERATOR:** Wolverine Gas and Oil Company

WELL NAME & NUMBER: Kings Meadow Ranches 17-6

API NUMBER: 43-041-30040

LEASE: Fed FIELD/UNIT: Covenant

LOCATION: 1/4,1/4 SENW Sec: 17 TWP: 23S RNG: 1W 1680 FNL 2217 FWL LEGAL WELL SITING: 460 F SEC. LINE; 460 F 1/4,1/4 LINE; 920 F ANOTHER WELL.

GPS COORD (UTM): X= 418958 E; Y= 4295403 N SURFACE OWNER: Wolverine.

#### PARTICIPANTS

Location originally looked at by M. Jones (DOGM), Shaun Burd (Western Land Services), and Ed Bonner (SITLA), on September 7, 2004. This well is in addition the original 4 proposed wells for this pad.

#### REGIONAL/LOCAL SETTING & TOPOGRAPHY

Proposed location is ~3.5 miles south of Sigurd, in Sevier County, Utah. Staked location lies east of Highway 24 on Wolverine Gas and Oil Company owned property. Steep hills surround the sagebrush dominated flat, from where the well is proposed to be drilled. Access to this well will be along existing Wolverine oil field roads from UDOT maintained roads. No new access road will be built for this location, as it will utilize existing access. The direct area drains to the northwest, into Brine Creek then further west eventually into the Sevier River, a year-round live water source ~2.5 miles northwest of the proposed location. Dry washes run throughout the area.

#### SURFACE USE PLAN

CURRENT SURFACE USE: Grazing and wildlife habitat.

PROPOSED SURFACE DISTURBANCE:  $180' \times 360' \text{ w}/ 240' \times 100' \times 10'$  (excluded) pit. This well is proposed on an existing pad along with 4 previously drilled wells, no addition disturbance is planned at this time.

LOCATION OF EXISTING WELLS WITHIN A 1 MILE RADIUS: 9 proposed, producing, and/or PA wells are within a 1 mile radius of the above proposed well.

LOCATION OF PRODUCTION FACILITIES AND PIPELINES: On location and along roadway to production facilities south of 17-1 location.

SOURCE OF CONSTRUCTION MATERIAL: Obtained locally and trucked to site.

ANCILLARY FACILITIES: None anticipated.

WILL DRILLING AT THIS LOCATION GENERATE PUBLIC INTEREST OR CONCERNS? (EXPLAIN): This well will be drilled on an existing pad consisting of 4 wells, all to be drilled directionally. The pad sits next to a recently drilled vertical well, Kings Meadow Ranches 17-1. Highway 24 runs past

all of this activity, therefore any and all activity associated with these wells can be seen by the public, which may increase public interest and/or concern.

#### WASTE MANAGEMENT PLAN:

Portable chemical toilets will be emptied into the municipal waste treatment system; garbage cans on location will be emptied into centralized dumpsters, which will be emptied into an approved landfill. Drilling fluid, and completion/frac fluid will be removed from the pit upon completion of the well. Cuttings will be buried in the pit unless oil based mud is used. If oil based mud is used disposal of the cuttings should be discussed with the Division. Used oil from drilling operations and support will be hauled to a used oil recycling facility. Produced water will be disposed of at an approved facility.

#### ENVIRONMENTAL PARAMETERS

AFFECTED FLOODPLAINS AND/OR WETLANDS: Dry washes run throughout the immediate area of the proposed well location.
FLORA/FAUNA: Sagebrush, greasewood, winter-fat, 4-wing salt-brush, deer rodents, fowl.
SOIL TYPE AND CHARACTERISTICS: Rocky clay.
SURFACE FORMATION & CHARACTERISTICS: Arapien Shale
EROSION/SEDIMENTATION/STABILITY: Erosive upon disturbance.

#### RESERVE PIT

CHARACTERISTICS: <u>Dugout earther</u>, 240'x100'x10', exterior to location. The existing pit is expected to be sufficient for drilling the 17-6 well. However, if pit volume becomes an issue, due to cuttings, Wolverine will contact The Division for approval and stipulations for enlarging the reserve pit prior to construction.

LINER REQUIREMENTS (Site Ranking Form attached): Liner required.

#### SURFACE RESTORATION/RECLAMATION PLAN

PALEONTOLOGICAL POTENTIAL: None observed.

As per Wolverine.

SURFACE AGREEMENT: Wolverine owns the surface.

CULTURAL RESOURCES/ARCHAEOLOGY: Mountain States Archaeology, 7/13/2004.

#### OTHER OBSERVATIONS/COMMENTS

I have visited this location many times performing inspections during the drilling phase of the previously drilled wells (4) on this location.

The reserve pit is lined and currently in good condition. Reserve pit volume may become an issue depending on drilling conditions. I have spoke with Steve Hash (Exact Engineering) regarding the issue. If pit volume becomes an issue, due to cuttings, Wolverine will contact The Division for approval and stipulations for enlarging the reserve pit, prior to construction.

#### ATTACHMENTS

Photos of this location were taken and placed on file.

Mark L. Jones
DOGM REPRESENTATIVE

April 25, 2005 / 2:00 pm DATE/TIME

#### Evaluation Ranking Criteria and Ranking Score For Reserve and Onsite Pit Liner Requirements

Site-Specific Factors	Ranking	Site Ranking
Distance to Groundwater (feet) >200 100 to 200 75 to 100 25 to 75 <25 or recharge area	0 5 10 15 20	0
Distance to Surf. Water (feet) >1000 300 to 1000 200 to 300 100 to 200 < 100	0 2 10 15 20	0
Distance to Nearest Municipal Well (feet) >5280 1320 to 5280 500 to 1320 <500	0 5 10 20	0
Distance to Other Wells (feet) >1320 300 to 1320 <300	0 10 20	0
Native Soil Type Low permeability Mod. permeability High permeability	0 10 20	10
Fluid Type Air/mist Fresh Water TDS >5000 and <10000 TDS >10000 or Oil Base Mud Fluid containing significant levels of hazardous constituents	0 5 10 15	10
Drill Cuttings Normal Rock Salt or detrimental	0 10	0
Annual Precipitation (inches) <10 10 to 20 >20	0 5 10	
Affected Populations <10 10 to 30 30 to 50 >50	0 6 8 10	0
Presence of Nearby Utility Conduits Not Present Unknown Present	0 10 15	10

Sensitivity Level I = 20 or more; total containment is required, consider criteria for excluding pit use. Sensitivity Level II = 15-19; lining is discretionary.

Sensitivity Level III = below 15; no specific lining is required.

Final Score

35 (Level I Sensitivity)

# **Conditions of Approval/Application for Permit to Drill:**

- 1. Maintain the reserve pit liner.
- 2. If additional reserve pit is needed, contact DOGM for approval and stipulations for enlarging the reserve pit, prior to construction.

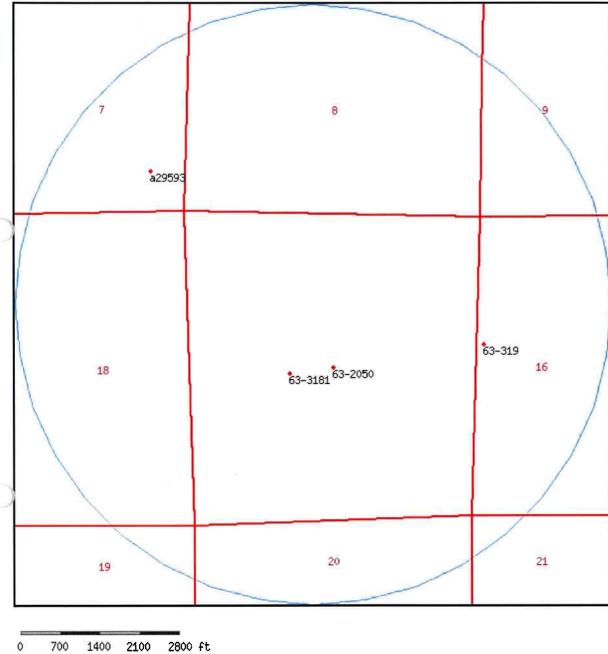


### **WRPLAT Program Output Listing**

Version: 2004.12.30.00

Rundate: 05/03/2005 05:19 PM

Radius search of 5280 feet from a point S1680 E2217 from the NW corner, section 17, Township 23S, Range 1W, SL b&m Criteria:wrtypes=W,C,E podtypes=all status=U,A,P usetypes=all



# Water Rights

WR Number	Diversion Type/Location	Well Log	Status	Priority U	Jses	CFS ACFT	Owner Name
<u>63-2050</u>	Point to Point		P	19030000 C	S (	0.010 0.000	RICHFIELD DISTRICT USA BUREAU OF LAND MANAGEMENT
63-3180	0 0 17 23S 1W SL Surface		P	18700000 I	,	3.160 0.000	150 EAST 900 NORTH G. W. NEBEKER
	S2900 E1800 NW 17 23S 1W SL						SIGURD UT 84657
)63-3181	Surface		P	18700000 D	OS (	0.010 0.000	G. W. NEBEKER
	S2900 E1800 NW 17 23S 1W SL			·			SIGURD UT 84657
63-319	Underground		P	19560121 S	. (	0.015 0.000	A. BRYANT AND J. LLEWELLYN YOUNG
	N330 E100 W4 16 23S 1W SL						RICHFIELD UT 84701
<u>a29593</u>	Underground		A	20041130 IO	0 (	0.002 1.000	WOLVERINE GAS AND OIL CORPORATION
*	N660 W660 SE 07 23S 1W SL						ONE RIVER FRONT PLAZA

Natural Resources | Contact | Disclaimer | Privacy Policy | Accessibility Policy



#### State of Utah

# Department of Natural Resources

MICHAEL R. STYLER Executive Director

Division of Oil, Gas & Mining

JOHN R. BAZA
Division Director

JON M. HUNTSMAN, JR. Governor

GARY R. HERBERT Lieutenant Governor

May 9, 2005

Wolverine Gas & Oil Company of Utah, LLC One Riverfront Plaza 55 Campau, NW Grand Rapids, MI 49503-2616

Re: Kings Meadow Ranches #17-6 Well, 1680' FNL, 2217' FWL, SE NW, Sec. 17, T. 23 South, R. 1 West, Bottom Location 660' FNL, 1925' FWL, NE NW, Sec. 17, T. 23 South, R. 1 West, Sevier County, Utah

#### Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann.§ 40-6-1 et seq., Utah Administrative Code R649-3-1 et seq., and the attached Conditions of Approval, approval to drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-041-30040.

Sincerely,

Gil Hunt

**Acting Associate Director** 

pab Enclosures

cc: Sevier County Assessor

Bureau of Land Management, Moab District Office

Operator:		Wolverine Gas & Oil Company of Utah, LLC			
Well Name & Num	ber	Kings Meadow Ranches #17-6			
API Number:		43-041-30040			
Lease:		Fee			
Location: Bottom Location:	SE NW_ NE NW	Sec. 17	T. 23 South	<b>R.</b> 1 West	

#### **Conditions of Approval**

#### 1. General

Compliance with the requirements of Utah Admin. R. 649-1 *et seq.*, the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

#### 2. Notification Requirements

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- 24 hours prior to cementing or testing casing
- 24 hours prior to testing blowout prevention equipment
- 24 hours prior to spudding the well
- within 24 hours of any emergency changes made to the approved drilling program
- prior to commencing operations to plug and abandon the well

The following are Division of Oil, Gas and Mining contacts and their work telephone numbers (please leave a voice mail message if the person is not available to take the call):

- Dan Jarvis at (801) 538-5338
- Carol Daniels at (801) 538-5284 (spud)

#### 3. Reporting Requirements

All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

- 4. In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.
- 5. Compliance with the State of Utah Antiquities Act forbids disturbance of archeological, historical, or paleontological remains. Should archeological, historical or paleontological remains be encountered during your operations, you are required to immediately suspend all operations and immediately inform the Trust Lands Administration and the Division of State History of the discovery of such remains.

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- 6. Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis. (Copy Attached)
- 7. This proposed well is located in an area for which drilling units (well spacing patterns) have not been established through an order of the Board of Oil, Gas and Mining (the "Board"). In order to avoid the possibility of waste or injury to correlative rights, the operator is requested, once the well has been drilled, completed, and has produced, to analyze geological and engineering data generated therefrom, as well as any similar data from surrounding areas if available. As soon as is practicable after completion of its analysis, and if the analysis suggests an area larger than the quarter-quarter section upon which the well is located is being drained, the operator is requested to seek an appropriate order from the Board establishing drilling and spacing units in conformance with such analysis by filing a Request for Agency Action with the Board.



Department of Natural Resources

MICHAEL R. STYLER Executive Director

Division of Oil, Gas & Mining

JOHN R. BAZA Division Director JON M. HUNTSMAN, JR. Governor

GARY R. HERBERT Lieutenant Governor

> May 9, 2005 Amended June 1, 2005

Wolverine Gas & Oil Company of Utah, LLC One Riverfront Plaza 55 Campau, NW Grand Rapids, MI 49503-2616

Re: Kings Meadow Ranches 17-7 Well, 1680' FNL, 2217' FWL, SE NW, Sec. 17, T. 23 South, R. 1 West, Bottom Location 2204' FNL, 1059' FWL, SW NW,

Sec. 17, T. 23 South, R. 1 West, Sevier County, Utah

#### Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann.§ 40-6-1 *et seq.*, Utah Administrative Code R649-3-1 *et seq.*, and the attached Conditions of Approval, approval to drill the referenced well is granted.

Appropriate information has been submitted to DOGM and administrative approval of the requested exception location is hereby granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-041-30040.

Sincerely,

Gil Hunt

**Acting Associate Director** 

pab Enclosures

cc: Sevier County Assessor

Bureau of Land Management, Moab District Office

Operator:		Wolverine Gas & Oil Company of Utah, LLC				
Well Name & Numl	oer	Kings Meadow Ranches 17-7 43-041-30040				
API Number:						
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Location: Rottom Location:	SE NW_ SW NW	Sec. 17	T. 23 South T. 23 South	R. 1 West		

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Page 2 API #43-041-30040 May 9, 2005

6. Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis. (Copy Attached) Refer to Statement of Basis for Kings Meadow Ranches 17-6.

# STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES

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		ate use only)					APPR	OVED	BY THE	STATE

API NUMBER ASSIGNED: 43-041 - 30040

APPROVAL:



# Section 17, T.23 S., R.1 W., S.L.B. & M. REESTABLISHED FROM FOUND 1967 B.L.M. 1987 B.L.M. SURVEY BRASS CAP \$89'09'20"E S89'09'20"E 1297.56" 1297,56 1680 (well name change only from Wolverine Federal 17-6) TO: Kings Meadow Ranches 17-7 Stewn R. Hale 5/29/05 ELEV. UNGRADED GROUND = 5731.61 2217' FWL FOUND 1987 B.L.M. FOUND 1967 B.L.M. BRASS CAP BRASS CAP REESTABLISHED FROM 1967 B.L.M. SURVEY FOUND 1967 B.L.M. BRASS CAP FOUND 1967 B.L.M. BRASS CAP 587'30'57"V 587'30'57' 2458.54 BASIS OF BEARINGS BASIS OF BEARING USED WAS NO273'06"W BETWEEN THE SOUTHWEST CORNER AND THE WEST QUARTER CORNER OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. LATITUDE = 38'48'19.4600" (38.805405556) LONGITUDE = -111'56'02.8792" (111.934133111)

#### PROJECT

# Wolverine Gas & Oil Company of Utah, LLC.

WELL LOCATION, LOCATED AS SHOWN IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY, UTAH

#### LEGEND

- SECTION CORNERS LOCATED
- QUARTER SECTION CORNERS LOCATED
- PROPOSED WELL HEAD



THE PURPOSE OF THIS SURVEY WAS TO PLAT THE WOLVERINE FEDERAL #17-6 LOCATION. LOCATED IN THE SE 1/4 OF THE NW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M. SEVIER COUNTY.

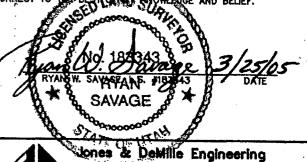
#### BASIS OF ELEVATION

ELEVATION BASED ON U.S.G.S. BENCH MARK LOCATED IN THE SW 1/4 OF SECTION 17, T.23 S., R.1 W., S.L.B. & M.



#### CERTIFICATE

THIS IS TO CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF ACTUAL SURVEYS MADE BY ME OR UNDER MY SUPERVISION, AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST CENTRY KNOW FOCE AND BELIEF.



# 4

1535 South 100 West — Richfield, Utch 84701 Phone (435) 888-8286 Fax (435) 588-8288 www.Jonesanddemills.com

Well Location Plat for

Wolverine Gas & Oil Company of Utah, LLC.

- 1					-	
	DESIGNED	SURVEYED T.W.Q.			PROJECT NO.	SHEET NO.
1	DATE		R.W.S.	K.B.B.	0406160	1
	Mor. 2005	L	Wells	SCALE 1" =1000"	0.00	•

# WOLVERINE GAS AND OIL COMPANY OF UTAH, LLC

#### DRILLING PROGNOSIS

Kings Meadow Ranches # 17-7
NE NW SEC 17-T23S-R1W
SEVIER CO., UTAH

#### BRIEF DRILLING PLAN

Due to surface topography constraints, directionally drill a 6800' MD (6684'TVD) test of the Navajo 1 formation on a day work contract basis from Wolverine's present work area known as Drill Pad A-2 (f) located in SE NW of Sec 17 T23S – R01W, Sevier Co, UT. Please refer to the directional drilling plan attached for detailed hole angle, trajectory and target information. Deviation is the primary drilling concern in this area. No abnormal pressure or hydrogen sulfide gas is expected, however, an H2S detector will be utilized. The projected surface and bottomhole locations are to be as follows:

Surface Location:

1680' fnl & 2217' fwl of Sec 17 T23S – R01W

BHL @ top of NVJO1 (6073' TVD) 515' S & 905' W of SHL in Sec 17 T23S – R01W

20" conductor casing will be cemented to surface at approximately 120 ft BGL. 13-3/8" surface csg will be set & cemented to surface in a 17-1/2" hole deviated to approximately 13 deg at +/- 2000' MD (+/- 1985' TVD). A 12-1/4" hole will then be drilled to +/- 5950' MD (5830' TVD) maintaining an approximate 13 deg tangent section to 5500' then dropping angle to 5 deg by 5950'. 9-5/8" protective casing will be set from surface to TD & cemented over the lower 1000'. An 8-1/2" hole will then be drilled near vertical to +/-6800' (6684' TVD). 7" production casing will be run from TD back to surface & cemented to approximately 800' into the 9-5/8" protective casing.

#### **EMERGENCY NUMBERS**

Sevier Valley Medical Center	(435)-896-8271
Medical Helicopter	(800)-453-0120
Sheriff Department	(435)-896-2600
Fire Department-Richfield, UT	(435)-896 <b>-</b> 5479
Bureau of Land Management (Richfield):	(435)-896-1500
Bureau of Land Management (Salt Lake City)	(801) 539-4045
Utah Division of Oil, Gas and Mining (Salt Lake City):	(801)-538-5340

Kings Meadow Ranches #17-7 (A2f) (ver1 2005.05.30) Section 17 T23S-R1W Sevier Co.,UT

# **United States Bureau of Land Management**

Contact Al McKee (801) 539-4045 24 hrs prior to spudding

# Utah Division of Oil, Gas and Mining

Contact Carol Daniels (801) 538-5284, 24 hrs prior to spudding

## **GENERAL INFORMATION**

OBJECTIVE: Navajo 1 @ 6073' (TVD)

ELEVATION: 5736' GL (actual) 5753' KB

PROJECTED TOTAL DEPTH:

6800' MD; 6684' TVD

**SURFACE LOCATION:** 

1680' FNL & 2217' FWL

Section 17-23S-1W

**COUNTY:** Sevier

STATE: Utah

DIRECTIONS TO LOCATION:

From the town of Sigurd, Utah go south

approximately 3.5 miles on Hwy #24 to location on

the left side of the road.

# PROPOSED CASING PROGRAM:

Hole Size	Casing Size	Casing Size Wt./Ft.		Joint	Measured Depth Set	
30"	20"	.25 wall	X42	PE welded	120'	
17-1/2"	13-3/8"	68#	J-55	BTC	0'-2000'	
12-1/4"	9-5/8"	* 47#	N-80	LTC	0'-5950'	
8-1/2"	7"	** 26#	N-80	LTC	0' -6800'	

<sup>\*</sup> due to availability 47# HCP-110 may be substituted for N80

<sup>\*\*</sup> due to availability 23# HCP-110 may be substituted for 26# N80

Hole Size	Casing Size	Drift ID, in.	OD of Couplings	Annular Volume in OH, cf/ft	Annular Volume in Csg, cf/ft	Capacity of casing, cf/ft
30"	20"	Conductor	Na			
17-1/2"	13-3/8"	12.259	14.375	.6946	1.0982	.8406
121/4"	9-5/8"	8.525	10.625	0.3127	0.4659	0.4340
8-1/2	7"	6.250	7.656	.1268	.1438	.2148

#### **GEOLOGIC FORMATIONS:**

Formation	Interval (TVD)	Interval (MD)	Lithology	Prod	
Arapien	Surf - 5680'	Surf – 5794'	sh, siltstone,salt,evaporites		
TwinCreek1	5680'- 6073'	5794'-6188'	Carbonates	X	
Navajo 1	6073'- 6684'	6188'-6800'	Sandstone w/ minor shale	X	
Total Depth	6684'	6800'			

## CONSTRUCTION OF SURFACE LOCATION

360'x 180' Pad 150'x 100' x 10' Reserve Pit with a 12 mil synthetic liner 96" diameter tin horn cellar, 10' deep. Flare pit a minimum of 100' from wellhead.

## SURFACE HOLE: 120' to 2000'

Directionally drill a 17-1/2" hole with a PDC bit, mud motor & MWD equipment to approximately 2000' using salt mud system from prior well (make hole to fit 13-3/8" casing). Loss circulation could be a problem in this interval and, if such occurs, begin pumping LCM sweeps. If loss circulation cannot be healed with ±25 ppb LCM, consider dry drilling (no returns). Maintain hole angle and direction in keeping with the attached directional plan.

# PRESSURE CONTROL & SAFETY EQUIPMENT FOR SURFACE HOLE

#### **Bottom to Top**

20" 2M x 20" SOW flange

20" 2M x 20" 2M mud cross w/ (2) 7-1/16" 2M side outlets

one outlet 7-1/16" HCR valve w/6" blooie line to mud separator & flare

pit

one outlet (blank)

20" drilling nipple with fillup line and 10-3/4" flow line w/ flowline valve

20" rotating head

Upper kelly cock valves with handles available

Safety valves and subs to fit all drill string connections in use

Inside BOP or float sub available

# MUD PROGRAM FOR SURFACE HOLE

DEPTH MUD WEIGHT TYPE VISC FLUID LOSS

120 -2000'

9.6 - 10.2

Salt mud

40-55

N/C

Note: Sweep hole every 100 - 200 feet or as needed for hole cleaning. Maintain maximum flowrates for hole cleaning. Use salt gel and FlowZan polymer to maintain properties.

#### CASING PROGRAM FOR SURFACE HOLE

DEPTH S	SIZE	LENGTH_	WT	GRADE	THREAD	REMARKS
120 - 2000'	13-3/8"	2000'	61#	J-55	LT&C	

Casing Running Sequence:

guide shoe, 1 jt of 13-3/8" 61# J55 LT&C, Float collar, balance of 13-3/8" 61# J55 LT&C, centralizers as reqd. RU cement co., hold safety meeting, test lines, cement 13-3/8" casing per cement company recommendation and the cementing guide below. Displace with fresh water or mud.

# CEMENTING PROGRAM FOR SURFACE HOLE

Lead:

600 sx hi-fill

Mixed at:

11.0 ppg

Yield:

 $3.86 \, \text{ft}^3/\text{sx}$ 

Tail: 470 sx Premium G

Mixed at:

15.8 ppg

Yield:

 $1.18 \text{ ft}^3/\text{sx}$ 

MUST CIRCULATE CEMENT TO SURFACE If the cement does not circulate to surface contact the BLM and UDOGM office for further instructions and remedial actions. Top out with premium cement regardless of circulation.

#### **WOC A TOTAL OF 24 HOURS:**

Wait 4 hours with the hydrostatic pressure of the displacement fluid in place, then cut off conductor and weld on a 13-5/8" 5M x 13-3/8" SOW casing head w/ MBS spool configured to hang both 9-5/8" and 7" csg strings without nippling down BOPE. NU a 13-5/8" 5M double ram BOP w/ 5M annular and 5M choke manifold rigged to mud/gas separator, mud tanks and flare pit.

# PROTECTIVE CASING HOLE: 2000' to 5950'

Trip in the hole with a 12-1/4" bit, mud motor, MWD & BHA. Drill float, shoe and 20'of new hole. Perform a formation integrity test to 10.5 ppg mud weight equivalent. Directionally drill a 12-1/4" hole with a PDC and/or a TCI rock bit, mud motor, MWD & BHA to approximately 5950' MD using same salt mud system as above. Loss circulation, moving salt, gypsum and anhydrite stringers may be a problem in this interval. Maintain hole angle and azimuth in keeping with the attached directional plan. Protective casing should be set into the top of the Twin Creek formation approximately 100-150'.

# PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PROTECTIVE CASING STRING

#### Bottom to Top (see attached 5M BOP diagram)

13-5/8" 5M x 13-3/8" SOW casing head w/ (2) 2-1/16" SSO's (for 9-5/8")

13-5/8" 5M x 13-5/8" 5M multi-bowl casing spool (for 7")

13-5/8" 5M x 13-5/8" spacer spool

13-5/8" 5M x 13-5/8" 5M mud cross with (2) side outlets:

one outlet 2-1/16" 5M kill line

one outlet 3-1/16" 5M choke line

13-5/8" 5M double ram BOP w/ 5" pipe rams top & CSO rams btm

13-5/8" 5M Annular Preventer

13-5/8" 5M rotating head

Connect BOP to choke manifold with pressure guage Upper kelly cock valves with handles available Safety valves and subs to fit all drill string connections in use Inside BOP or float sub available

#### **Testing Procedure:**

#### Annular Preventer

The annular preventer will be pressure tested to 1500 psi for a period of ten minutes or until provisions of the test are met, whichever is longer. At a minimum, the pressure test will be performed:

- 1) When the annular is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The annular preventer will be functionally operated once per week.

#### Blowout Preventer

The BOP, choke manifold and related equipment will be pressure tested to 4500 psi, or 70% of the internal yield of the casing. Pressure will be maintained for a period of at least ten minutes or until the requirements of the test are met, whichever is longer. At a minimum the pressure test will be performed:

- 1) When the BOP is initially installed
- 2) Whenever any seal subject to test pressure is broken
- 3) Following related repairs and at 30 day intervals

The pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills will be recorded in the IADC driller's log.

Kings Meadow Ranches #17-7 (A2f) (ver1 2005.05.30) Section 17 T23S-R1W Sevier Co.,UT

#### Accumulator:

The accumulator will have sufficient capacity to open the hydraulically controlled gate valve (if so equipped), close all rams plus the annular preventer, and retain a minimum of 200 psig above pre-charge on the closing manifold without the use of the closing unit pumps. The reservoir capacity will be double the accumulator capacity, and the fluid level will be maintained at the manufacturer's recommendations. The accumulator shall have two (2) independent power sources to close the preventers. Nitrogen bottles may be one of the independent power sources and, if so, shall maintain a charge equal to the manufacturer's specifications.

The accumulator pre-charge pressure test will be conducted prior to connecting the closing unit to the BOP stack and at least once every six months thereafter. The accumulator pressure will be corrected if the measured pre-charge pressure is found to be above or below the maximum or minimum limits specified in Onshore Oil & Gas Order Number 2 (only nitrogen gas may be used to pre-charge).

## Choke Manifold Equipment, Valves and Remote Controls

All choke lines will be straight lines unless turns use tee blocks or are targeted with running tees, and will be anchored to prevent whip and vibration

A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will be maintained in the open position and will be closed only when the power source for the accumulator is inoperative.

Remote controls shall be readily accessible to the driller. Remote controls will be capable of both opening and closing all preventers. Master controls will be at the accumulator and will be capable of opening and closing all preventers and the choke line valve (if so equipped).

The choke manifold and BOP extension rods with hand wheels will be located outside the rig sub structure. The hydraulic BOP closing unit will be located at least twenty-five feet from the well head but readily accessible to the driller.

A flare line will be installed after the choke manifold, extending 100 feet from the center of the drill hole to a separate flare pit.

# MUD PROGRAM FOR PROTECTIVE CASING HOLE

DEPTH	MUD WEIGHT	TYPE	VISC	FLUID LOSS
2000' – 5950'	9.8 - 10.5	Salt Mud	36 - 50	NC

Maintain a salt mud system as salt and gypsum sections are drilled. If loss circulation becomes a problem use LCM sweeps to control seepage & clean hole.

# CASING PROGRAM FOR PROTECTIVE CASING HOLE

DEPTH SIZE LENGTH WT GRADE THREAD REMARKS

0'-TD' 9-5/8" 5950' \* 47# N-80 LT&C

Rig up casing tools and run 9-5/8" protective casing as follows:
Float shoe, 2 joint of 9-5/8" \* 47.0# N-80 LT&C casing, float collar, 6 centralizers, middle shoe joint and one every other joint for 12 jts, run balance of 9-5/8" 47# N-80 
\* due to availability 47# HCP-110 may be substituted

## CEMENT PROGRAM FOR PROTECTIVE CASING

350 sx 50:50 POZ

Weight:

13.0 ppg

Yield:

 $1.71 \text{ ft}^3/\text{sx}$ 

TOC at  $\sim 5000$ '; Calculate cement volume based on gauge hole plus 30% excess. Displace with mud. Land 9-5/8" csg with casing mandrel. Lay down landing joint. Clean pits and prepare for next hole section.

# PRODUCTION HOLE: 5,950 to 6800'

Trip in the hole with an 8-1/2" insert bit, mud motor & MWD. Drill float, shoe and 20' of new hole.

# PRESSURE CONTROL AND SAFETY EQUIPMENT FOR PRODUCTION CASING STRING

Same as Protective String above due to utilization of Multi-Bowl Casing Head Assembly — Land 9-5/8" through BOPE with casing mandrel, release, test & proceed to drilling production hole section — Nipple down & nipple up NOT required — all BOPE remains intact — normal periodic pressure testing remains on schedule

## MUD PROGRAM FOR PRODUCTION HOLE

DEPTH	MUD WEIGHT	TYPE	VISC_	pH Fl	LUID LOSS
5950' - 6800'	8.3 – 9.0	LC Polymer	34-50	9.0-10.0	10cc or Less

# **EVALUATION PROGRAM FOR PRODUCTION HOLE**

At TD, circulate and condition hole clean for logs. Short trip to the intermediate casing monitoring well closely. TOH for logs. Run Induction tool as run #1 to determine hole conditions for logging. Adjust tool configurations depending on hole condition. Mudlogger: From 2000' to total depth.

#### Electric Logs:

Tool	PCP to TD
SDL/DSN/GR (DSN PCP to surface casing)	Yes
HRI/GR/SP (DLL/MSFL/SP/GR available if brine system)	Yes
EMI	Yes
NMR	Yes

DST: none planned

Cores: none planned

## CASING PROGRAM FOR PRODUCTION HOLE

DEPTH	SIZE	LENGTH	WT	GRADE	THREAD	REMARKS	
0' – TD'	7"	6800'	* 26#	N-80	LT&C		

<sup>\*</sup> due to availability 23# HCP-110 may be substituted for 26# N-80

Rig up casing tools and run 7" production casing as follows:

Float shoe, 1 joint of 7" 26# N-80 LT&C casing, Float collar, Run balance of 7" 26# N80.

# CEMENT PROGRAM FOR PRODUCTION CASING

400 sx (50:50) POZ Premium

Weight:

14.35 ppg

2 % Bentonite

Yield:

 $1.27 \text{ ft}^3/\text{sx}$ 

Friction reducer, salt & flocele

TOC at  $\pm$  5200 ft in 9-5/8" csg; Calculate cement volume based on log caliper +/- 25%. Displace cement w/water. Hang 85-90% casing weight in slips, ND, cut off, install B-

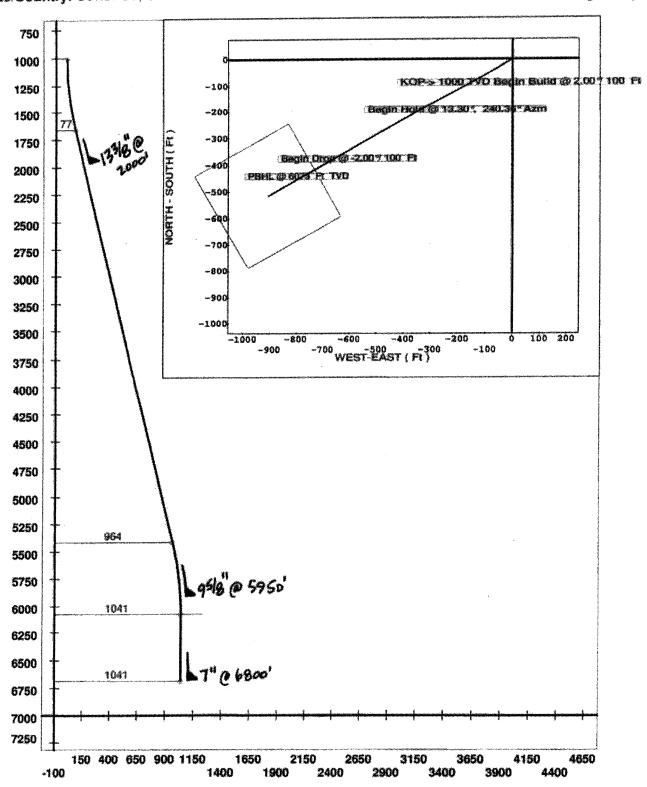
section and night cap. Clean pits and release rig.

#### **SCHEDULE**

Location preparation is presently scheduled to begin on or about existing Drilling operations are anticipated to begin on or about May 31, 2005 end

Company: Wolverine Gas & Oil Co of Utah, LLC Lease/Well: Kings Meadow Ranches 17-7 Location: NW/4 Sec 17 T23S R01W State/Country: Sevier Co, UTAH





VERTICAL SECTION (Ft)@ 240.36°

Job Number: is

State/Country: Sevier Co, UTAH

Company: Wolverine Gas & Oll Co of Utah, LLC Declination:

Lease/Well: Kings Meadow Ranches 17-7

Grid:

Location: NW/4 Sec 17 T23S R01W

File name: C:\WINSERVE\SURVEYS\KMR17-7P.SVY

Rig Name:

Date/Time: 30-May-05 / 22:19

RKB:

Curve Name: Interpolated from:

G.L. or M.S.L.:

#### Interpolated from:

# WINSERVE SURVEY CALCULATIONS Minimum Curvature Method Vertical Section Plane 240.36 Vertical Section Referenced to Wellhead Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True vertical Depth	Course Length FT	Vertical Section FT		E-W FT	Dogleg Severity Deg/100	BUILD RATE Deg/100	WALK RATE Deg/100	TFQ Deg
1000.00	.00	.00	1000.00		.00	.00.	.00	.00	.00	.00	-90.00
1100.02	2.00	240.36	1100.00	100.02	1.75	86	-1.52	2.00	2.00	-119.62	.00
1200.16	4.00	240.36	1200.00	100.14	6.99	-3.46	-6.08	2.00	2.00	.00	.00
1300.55	6.01	240.36	1300.00	100.39	15.75	-7.79	-13.69	2.00	2.00	.00	.00
1401.31	8.03	240.36	1400.00	100.76	28.06	-13.88	-24.39	2.00	2.00	.00	.00
1502.57	10.05	240.36	1500.00	101.26	43.97	-21.75	-38.22	2.00	2.00	.00	.00
1604.48	12.09	240.36	1600.00	101.90	63.54	-31.42	-55.22	2.00	2.00	.00	.01
1707.08	13.30	240.36	1700.00	102.61	86.52	-42.79	-75.20	1.18	1.18	.00	.00
1809.84	13.30	240.36	1800.00	102.76	110.16	-54.48	-95.74	.00	.00	.00	.00
1912.60	13.30	240.36	1900.00	102.76	133.79	-66.17	-116.28	.00	.00	.00	.00
2015.35	13.30	240.36	2000.00	102.76	157.43	-77.86	-136.83	.00	.00	.00	.00
2118.11	13.30	240.36	2100.00	102.76	181.07	-89.56	-157.37	.00	.00	.00	.00
2220.86	13.30	240.36	2200.00	102.76	204.71	-101.25	-177.92	.00	.00	.00	.00
2323.62	13.30		2300.00	102.76	228.35	-112,94	-198.46	.00	.00	.00	.00
2426.38	13.30	240.36	2400.00	102.76	251.99	-124.63	-219.01	.00	.00	.00	.00
2529.13	13.30		2500.00	102.76	275.63	-136,32	-239.55	.00	.00	.00	.00
2631.89	13.30		2600.00	102.76	299.26	-148.01	-260.10	.00	.00	.00	.00
2734.64	13.30		2700.00	102.76	322.90	-159.70	-280.64	.00	.00	.00	.00
2837.40	13.30		2800.00	102.76	346.54	-171.39	-301.19	.00	.00	.00	.00
2940.16	13.30	240.36	2900.00	102.76	370.18	-183.09	-321,73	.00	.00	.00	.00
3042.91	13.30		3000.00	102.76		-194,78	-342.28	.00	.00	.00	.00
3145.67	13.30		3100.00	102.76		-206.47	-362.82	.00	.00	.00	.00
3248.42	13.30		3200.00	102.76		-218.16	-383.37	.00	.00	.00	.00
3351.18	13.30		3300.00	102.76		-229.85	-403.91	.00	.00	.00	.00
3453.93	13.30	240.36	3400.00	102.76	488.37	-241.54	-424.46	.00	.00	.00	.00

N	Measured Depth FT	Incl Angle Deg	- Drift Direction Deg	True Yertical Depth	Course Length FT	Mar of the same state of the first	N-S FT	E-W FT	Dogleg Severity Deg/100	BUILD RATE Deg/100	WALK RATE Deg/100	TFO Deg
35	556.69	13.30	240.36	3500.00	102.76	512,01	-253.23	-445.00	.00	.00	.00	.00
36	359.45	13.30	240.36	3600.00	102.76	535.65	-264.92	-465.55	.00	.00	.00	.00
37	762.20	13.30	240.36	3700.00	102.76	559.29	-276.62	-486.09	.00	.00	.00	.00
38	364.96	13.30	240.36	3800.00	102.76	582.92	-288.31	-506.64	.00	.00	.00	.00
39	967.71	13.30	240.36	3900.00	102,76	606,56	-300.00	-527.18	.00	.00	.00	.00
												**
	70.47	13.30	240.36	4000.00	102.76	630.20	-311.69	-547.72	.00	.00	.00	.00
	73.23	13.30	240.36	4100.00	102.76	653.84	-323.38	-568.27	.00	.00	.00	.00
	275.98	13.30	240.36	4200.00	102.76	677.48	-335.07	-588.81	.00	.00	.00	.00
	378.74	13.30	240.36	4300.00	102.76	701.12 724.75	-346.76	-609.36	.00	.00	.00	.00.
44	181.49	13.30	240.36	4400.00	102.76	724.70	-358.45	-629.90	.00	.00	.00	.00
45	84.25	13.30	240.36	4500.00	102.76	748.39	-370.14	-650.45	.00	.00	.00	.00
	87.01	13.30	240.36	4600.00	102.76	772.03	-381.84	-670.99	.00	.00	.00	.00
	89.76	13.30	240.36	4700.00	102.76	795.67	-393.53	-691,54	.00	.00	.00	.00
	92.52	13.30	240.36	4800.00	102.76	819.31	-405.22	-712.08	.00	.00	.00	.00
49	95.27	13.30	240.36	4900.00	102.76	842.95	-416.91	-732.63	.00	.00	.00	.00
ew 24				<b>***</b>	450 76	~~~ ~~	4mm ma:	wagi ya gas, ya sang	**	A.B.	de de	**
	98.03	13.30	240.36	5000.00	102.76	866.58	-428.60	-753.17	.00	.00	.00	.00
	200.78	13.30	240.36	5100.00	102.76	890.22	-440.29	-773.72	.00	.00	.00	.00
	03.54	13.30	240.36	5200.00 5300.00	102.76	913.86 937.50	-451.98 -463.67	-794.26 -814.81	.00	.00	.00	.00
	06.30	13.30 13.30	240.36	5400.00	102.76 102.76	961.14	-403.67 -475.37	-835.35	.00	.00	.00. - 00.	00.
33	09.05	13.30	240,36	3400.00	102.76	201.14	**/ J.J/	-030.30	.00	.00	.00	180.00
56	11.50	11.54	240.36	5500.00	102.45	983.38	-486.37	-854.69	1.72	-1,72	.00	180.00
57	13.22	9.50	240.36	5600.00 1 5700.00	101.72	1001.96	-495.55	-870.83	2.00	-2.00	.00 -	180.00
58	14.33	7.48	240.36	5700.00	101.11	1016.89	-502.94	-883.81	2.00	-2.00	.00	180.00
59	14.98	5.47	240.36	5800.00	100.65		-508.55	-893.67	2.00	-2.00		180.00
60	15.29	3.46	240.36	5900.00	100.31	1036.04	-512.41	-900.46	2.00	-2.00	.00 ·	180.00
<b>&amp;</b> 1	15.39	1.46	240.36	6000.002	100.10	1040.34	-514.54	-904.19	2.00	-2.00	.00	180.00
	15.39	.00	240.36	6100.00	100.01		-515.00	-905.00	1.46	-1.46	.00	.00
	15.39	.00		6200.00	100.00		-515.00	-905.00	.00	.00	.00	.00
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# PRESSURE CONTROL SYSTEM SCHEMATIC

Prepared by: EXACT Engineering, Inc Tulsa, OK (918) 599-9400

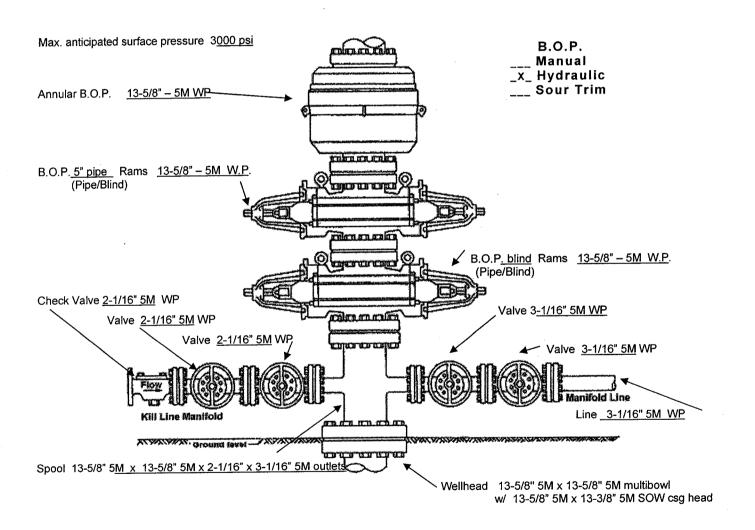
**5M BOP Stack** --- to be utilized while drilling holes for protective and production casings thru lower Arapien, Twin Creek & Navajo intervals

Operator:

Wolverine Gas & Oil Co. of Utah, LLC

Well name and number

Kings Meadow Ranches # 17-7



From:

"Steven R Hash" <stevehash@exactengineering.com>

To:

"Dustin Doucet" <dustindoucet@utah.gov>, "Al McKee" <al mckee@blm.gov>

Date:

5/31/2005 1:22:13 AM

Subject:

Kings Meadow Ranches 17-6 (name chg to KMR 17-7)

#### Gentlemen,

Wolverine desires to drill the well permitted as the Kings Meadow Ranches 17-6. Since this well name was utilized recently for the sidetrack of the Wolverine Federal 8-1 (Kings Meadow Ranches 17-6 (WF 8-

- 1)) a well name change is therefore in order. Additionally the BHL is being revised. To affect these requested changes please find attached for your review, DRAFT copies of the following:
- 1) cover letter & explanation
- 2) Sundry Notice to amend well name & BHL
- 3) amended APD
- 4) amended surveyor's plat
- 5) revised drilling prognosis & directional plan

Final copies are being sent via express mail on Tuesday, May 31, 2005. Please call if there any questions. Thank you

#### Steve

Steven R. Hash

**EXACT Engineering, Inc.** 

415 S. Boston, Suite 734

Tulsa, OK 74103

ofc (918) 599-9400 ofc fax (918) 599-9401

direct (918) 599-9801 mobil fax (801) 640-7470

stevehash@exactengineering.com <mailto:stevehash@exactengineering.com>

www.exactengineering.com <a href="http://www.exactengineering.com">http://www.exactengineering.com</a>

Petroleum Engineering Consulting and Field Services

Confidentiality Notice: The information in this e-mail may be confidential and/or privileged. This e-mail is intended

to be reviewed by only the individual or organization named in the e-mail address. If you are not the intended

recipient, you are hereby notified that any review, dissemination or copying of this e-mail and attachments, if any, or the information contained herein, is strictly prohibited

CC: "Edward Higuera" <EHiguera@wolvgas.com>, "Richard Moritz" <rmoritz@wolvgas.com>, "John Vrona" <jvrona@wolvgas.com>, "Darren Naylor" <darrennaylor@exactengineering.com>, "Helene Bardolph" <hbardolph@wolvgas.com>

From:

Earlene Russell

To:

Dan Triezenberg

Date:

5/31/2005 12:55:05 PM

Subject:

Kings Meadow Ranches 17-7

The bonding for the 17-7 looks acceptable. I can't answer for the application approval. Dustin will need to do that. His phone is (801) 538-5281. (He is copied on this e-mail.)

On Bonding - if Wolverine is not able to secure a surety and is retaining the CD's in the name of the Division - Wolverine will need to notify Brighton Bank to put a hold on each CD showing Brighton Bank needs **written** approval from the Division to release funds to someone else. Brighton Bank should also have a copy of the Form 4B for their records.

Thanks.

Earlene Russell Division of Oil, Gas & Mining PO Box 145801 Salt Lake City, UT 84114-5801 (801) 538-5336

>>> "Dan Triezenberg" <dtriezenberg@wolvgas.com> 05/31/05 12:14 PM >>> Earlene,

I just faxed you the CD copy and the form 4B. Please let me know that you have received it and that you are not looking for any additional information to process our approval request.

Thank you.

Dan Triezenberg

----Original Message----

From: Earlene Russell [mailto:earlenerussell@utah.gov]

Sent: Tuesday, May 31, 2005 2:05 PM

To: Dan Triezenberg Subject: Re: Fax number

Fax = (801) 359-3940

>>> "Dan Triezenberg" <<u>dtriezenberg@wolvgas.com</u>> 05/31/05 10:49 AM >>> Earlene,

Can you please email me your fax number so I can send this form 4B and CD information on to you? Thanks for your help.

Dan Triezenberg

**EXACT Engineering, Inc.** 

www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E. Registered Professional Engineer stevehash@exactengineering.com

#### CONFIDENTIAL PLEASE!

May 30, 2005

Mr. Dustin Doucet Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, UT 84114-5801

Re:

Wolverine's - Kings Meadow Ranches 17-6 well Sec 17 T23S R01W Sevier Co., UT API# 43-041-30040

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed the following:

- 1) UDOGM form 9, Sundry Notice (notice of intent) requesting...
  - a) amendment of well name
  - b) amendment of bottom hole location
- 2) UDOGM form 3, <u>Application For Permit To Drill</u> (cover page), to change well name from <u>Kings Meadow Ranches 17-6</u> to <u>Kings Meadow Ranches 17-7</u>.
- 3) Surveyor's plat reflecting well name change.
- 4) Revised <u>drilling prognosis</u> and <u>directional plan</u> changing bottom-hole location, formation tops and casing setting points for the revised operation. Please note that the drilling prognosis includes a change to the use of a 20 inch rotating head on top of 20" conductor while drilling 17-1/2" surface casing hole from 123' to 2000' in lieu of the 20" annular preventer presently being used. Mud weights of 10.2 ppg are now being used in this hole section and the rotating head will allow sufficient diversion should any shallow gas be encountered.

Please recall that the sidetrack of the Wolverine Federal 8-1 was renamed to Kings Meadow Ranches 17-6 (WF 8-1).

We respectfully request that the enclosed information remain confidential.

Very Truly Yours.

Steven R. Hash

Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

HECEIVED

JUN 0 1 2005

copy with enclosures to:

U.S. Bureau of Land Management; Salt Lake City, UT office; Wolverine Gas & Oil Co of Utah, LLC; Grand Rapids, MI office EXACT Engineering, Inc.

Mr.Al McKee Mr. Ed Higuera well file DIV. OF OIL, GAS & MINING

Petroleum Engineering Consulting, Personnel & Jobsite Supervision complete well design, construction & management, drilling, completion, production, pipelines, appraisals, due diligence, acquisitions, procedures, temporary personnel and field supervision

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES

17

		DIVISION OF OIL, G	AS AND MII	NING		5. LEASE DESIGNATION AND SERIAL NUMBER: UTU-73528
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Do	not use this form for proposals to drill n		ng wells below curi	ent bottom-hole dept	h, reenter plugged wells, or to	7. UNIT or CA AGREEMENT NAME:
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	olverine Gas and Oil Co	ompany or Otan, LLO			PHONE NUMBER:	10. FIELD AND POOL, OR WLDCAT:
		Grand Rapids	ATE MI ZIP	49203	(616) 458-1150	Exploratory Area
	OCATION OF WELL					
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lt i	s requested to amend th	ne well name of this a	uthority FRO	OM Kings Me	adow Ranches 17-6	TO Kings Meadow Ranches 17-7.
loc	s requested to amend the action as shown in the act. An amended APD co	ttached Drilling Progn	osis (ver 12	2005.05.30) a	and accompanying D	nd 905' W of the surface hole Directional Plan and revised Survey
W	olverine is the mineral le	essee of all minerals w	rithin 460' of	f the entire p	oposed wellbore.	
	ached: Amended APD, BLM	Drilling Prognosis, Dir	ectional pla	n & Survey F	Plat	·
NAM	E (PLEASEPRINT) Steven R.	Hash - Consulting En	gineer	TITLE	EXACT Engineerii	ng Inc (918) 599-9400
	ATURE Stuen	R. Hunh		DATE	5/30/2005	
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This sp	pace for State use only)					RECEIVED

JUN 0 1 2005

# STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES 5. LEASE DESIGNATION AND SERIAL NUMBER: DIVISION OF OIL, GAS AND MINING UTU-73528 6 IF INDIAN ALLOTTEE OR TRIBE NAME: SUNDRY NOTICES AND REPORTS ON WELLS 7. UNIT or CA AGREEMENT NAME: Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals. 8. WELL NAME and NUMBER: 1 TYPE OF WELL OTHER Drilling well GAS WELL OIL WELL Kings Meadow Ranches 17-6 9. API NUMBER: 2. NAME OF OPERATOR: 4304130040 Wolverine Gas and Oil Company of Utah, LLC 10. FIELD AND POOL, OR WILDCAT: PHONE NUMBER: 3. ADDRESS OF OPERATOR: <sub>210</sub> 49203 **Exploratory Area CITY** Grand Rapids STATE MI (616) 458-1150 55 Campau, NW 4. LOCATION OF WELL COUNTY: Sevier FOOTAGES AT SURFACE: 1680' FNL & 2217' FWL, Sec 17 T23S - R01W STATE OTR/OTR SECTION TOWNSHIP, RANGE, MERIDIAN: SENW 17 23S 1W LITAH CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA 11. TYPE OF ACTION TYPE OF SUBMISSION DEEPEN REPERFORATE CURRENT FORMATION ACIDIZE NOTICE OF INTENT SIDETRACK TO REPAIR WELL FRACTURE TREAT ALTER CASING (Submit in Duplicate) NEW CONSTRUCTION TEMPORARILY ABANDON CASING REPAIR Approximate date work will start: TUBING REPAIR OPERATOR CHANGE CHANGE TO PREVIOUS PLANS 5/30/2005 VENT OR FLARE PLUG AND ABANDON CHANGE TUBING SUBSEQUENT REPORT  $\mathbf{V}$ CHANGE WELL NAME PLUG BACK WATER DISPOSAL (Submit Original Form Only) WATER SHUT-OFF PRODUCTION (START/RESUME) CHANGE WELL STATUS Date of work completion: RECLAMATION OF WELL SITE OTHER: amended BHL COMMINGLE PRODUCING FORMATIONS RECOMPLETE - DIFFERENT FORMATION CONVERT WELL TYPE 12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, v olumes, etc. PLEASE KEEP THE ENCLOSED INFORMATION CONFIDENTIAL - THANK YOU It is requested to remove the suspension of authority of the existing permit (API# 43-041-30040). Notice-of-intent dated May 18, 2005 requested this suspension pending the drilling results of the offset well - Kings Meadow Ranches 17-6 (WF 8-1). This well has since been drilled and a completion attempt will be made. It is requested to amend the well name of this authority FROM Kings Meadow Ranches 17-6 TO Kings Meadow Ranches 17-7. It is requested to amend the bottom hole location FROM 660' FNL & 1925' FWL TO 515' S and 905' W of the surface hole location as shown in the attached Drilling Prognosis (ver 1 2005.05.30) and accompanying Directional Plan and revised Survey Plat. An amended APD cover page is also attached to reflect the above requested changes. Wolverine is the mineral lessee of all minerals within 460' of the entire proposed wellbore. attached: Amended APD, Drilling Prognosis, Directional plan & Survey Plat xc: BLM EXACT Engineering Inc (918) 599-9400 Steven R. Hash - Consulting Engineer TITLE NAME (PLEASE PRINT) 5/30/2005 DATE SIGNATURE

(This space for State use only)

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JUN 0 1 2005

#### WOLVERINE GAS AND OIL CORPORATION

Energy Exploration in Partnership with the Environment

June 1, 2005

Ms. Diana Whitney Utah Division of Oil, Gas & Mining 1594 W. N. Temple, Suite 1210 Salt Lake City, UT 84114-5801

RE:

Request for Directional Drilling/Exception to Rule 649-3-11

Kings Meadow Ranches 17-7 (KMR 17-7)

Covenant Field, Sevier County, UT

API No. 43-041-30040

Dear Ms. Whitney:

The purpose of this letter is to provide the information we discussed during conversation on April 31.

• Request for Exception to Rule 649-3-11: The proposed KMR 17-7 will be directionary drilled from the surface location known as the A-2 Pad, which is the same pad used to drill the Wolverine Federal 17-3, 17-4, 17-5 and KMR 17-6 (8-1) wells. The well is drilled directionally because of the limited land for drilling wells and because we wanted to minimize the "footprint" of our operations. The proposed bottom hole location of KMR 17-7 at the top of the Navajo is 505' FSL and 202' FEL of the SW/4 NW/4, Section 17 T23S-R1W, which is 258' east of the "400' window" allowed under Rule 649-3-2 (see attached diagram).

The proposed location falls within the Wolverine Federal Unit and Wolverine Gas & Oil owns the mineral lease for the proposed bottomhole location and the mineral leases within 460' radius of the proposed drilling location and for directly or diagonally offsetting drilling locations. Wolverine Gas & Oil owns all leases within 460 feet of the entire proposed trajectory of the wellbore.

The exception to Rule 649-3-11 is needed because a vertical well is not feasible, given our existing surface land situation.

If you have any questions, please call. Thanks again for your help. It is appreciated.

John Vrona,

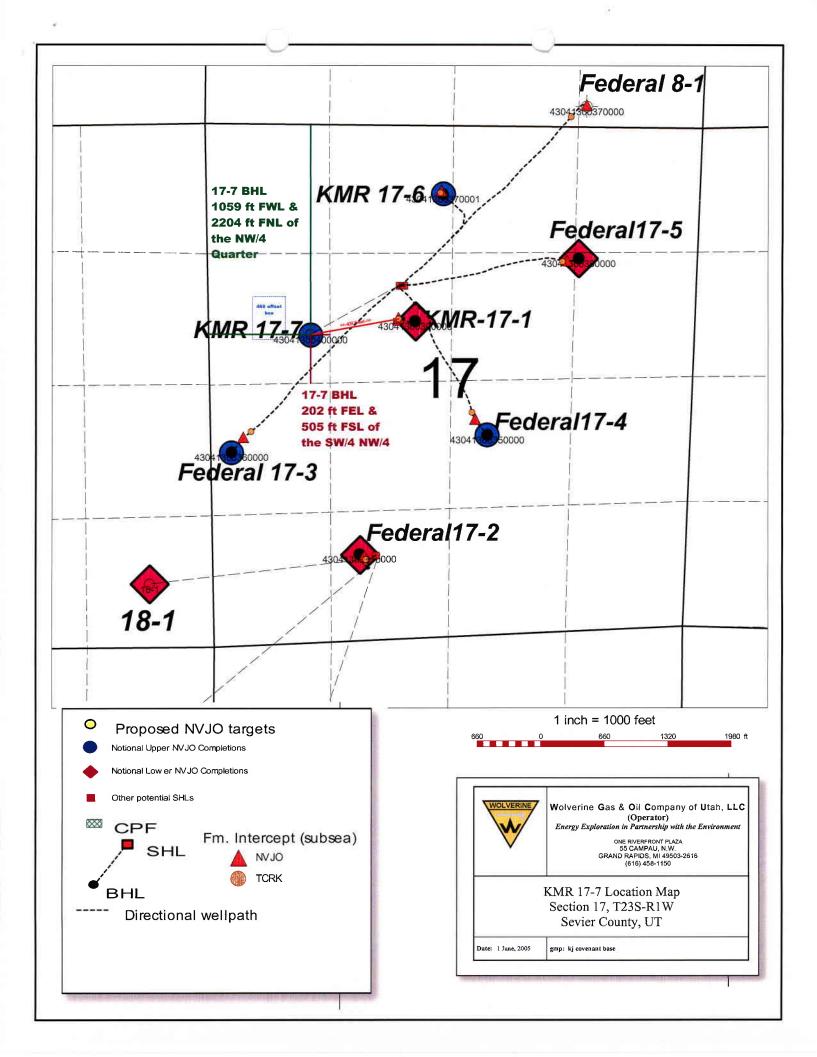
Sincerely;

Geology Manager

cc: KMR 17-7 Permit File

RECEIVED

DIV. OF OIL, GAS & MINING



#### WOLVERINE GAS AND OIL CORPORATION

Energy Exploration in Partnership with the Environment

June 1, 2005

Ms. Diana Whitney Utah Division of Oil, Gas & Mining 1594 W. N. Temple, Suite 1210 Salt Lake City, UT 84114-5801

RE:

Sundry Notice/Spacing Exception Rule 649-3-3 Kings Meadow Ranches 17-7 (KMR 17-7) API No 43-041-30040

Dear Ms. Whitney:

The purpose of this letter is to provide the information we discussed during our phone conversation on April 31.

• Request for Exception to Rule 649-3-2: The proposed bottom hole location of the KMR 17-7 at the top of the Navajo is 505' FSL and 202' FEL of the SW/4 NW4, Section 17 T23S-R1W, which is 258' east of the "400' window" allowed under Rule 649-3.2 (see attached diagram).

The proposed location falls within the Wolverine Federal Unit and Wolverine Gas & Oil owns the mineral lease for the proposed bottomhole location and the mineral leases within 460' radius of the proposed drilling location and for directly or diagonally offsetting drilling locations.

The exception to Rule 649-3-2 is needed because we are still defining the limits of the structure and our current geological interpretation suggests that the proposed location would be more favorable than extending the location further to the west within the "400' window."

The closest well to the planned BHL of the KMR 17-7 is the KMR 17-1, which is 926.5' to the east at the top of the Navajo wellbore intersection (see attached diagram).

If you have any questions, please call. Thanks again for your help. It is appreciated.

Sincerely,

Jøhn Vrona

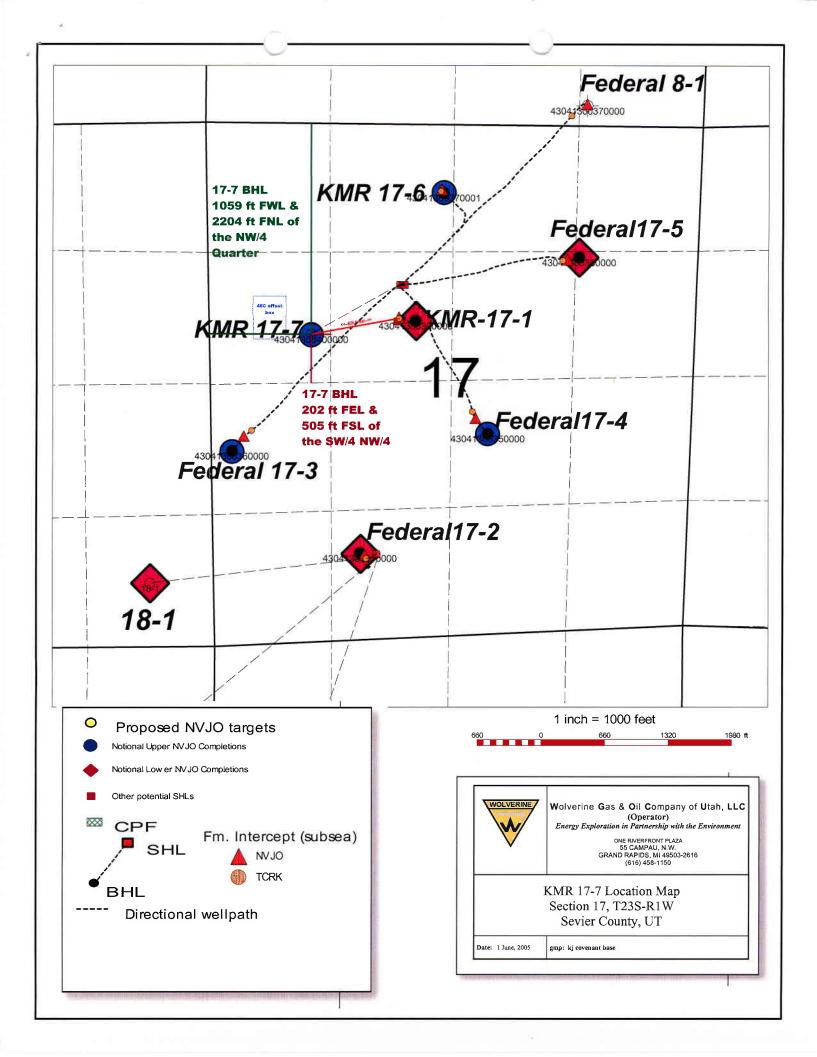
Geology Manager

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cc: KMR 17-7 Permit File

DIV. OF OIL, GAS & MINING



#### STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING

FORM 6

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ENTITY	ACTIC	'N E	<b>OPM</b>
	#\- I IL	JIN T	CRIVI

Operator:

Wolverine Gas and Oil Company of Utah, LLC

Operator Account Number: N 1655

55 Campau NW, One Riverfront Plaza

Address:

city Grand Rapids

zip 49503-2616 state MI

Phone Number: (616) 458-1150

Well 1

API Number	Well	Name	QQ	Sec	Twp	Rng	County
4304130040	Kings Meadow Ranc	hes 17-7	WNW	17	238	1W	Sevier
Action Code	Current Entity Number	New Entity Number	S	pud Dat	te		y Assignment ective Date
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Comments: SHL SENW

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#### ACTION CODES:

- A Establish new entity for new well (single well only)
- B Add new well to existing entity (group or unit well)
- C Re-assign well from one existing entity to another existing entity
- Re-assign well from one existing entity to a new entity
- Other (Explain in 'comments' section)

Steven R Hash - EXACT Engineering Inc

Signature

Consulting Engineer

6/6/2005

Title

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JUN 0 / 2005

DIV. OF OIL, GAS & MINING

(5/2000)

# CONFIDENTIAL

**EXACT Engineering, Inc.** 

www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E. Registered Professional Engineer stevehash@exactengineering.com

## CONFIDENTIAL PLEASE!

June 8, 2005

Mr. Dustin Doucet Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, UT 84114-5801

Wolverine Kings Meadow Ranches 17-7 well

Sec 17 T23S R01W △Sevier Co., UT API# 43-041-30040

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from inception on May 31, 2005 through June 7, 2005. The well was spudded on June 1, 2005 and 13-3/8" surface casing was set at 2003' on June 7, 2005. We respectfully request that the enclosed information remain confidential.

Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Helene Bardolph

EXACT Engineering, Inc.

well file

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DIN JE UIL, CAS & MINING

Petroleum Engineering Consulting, Personnel & Jobsite Supervision complete well design, construction & management, drilling, completion, production, pipelines, appraisals, due diligence, acquisitions, procedures, temporary personnel and field supervision

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хо			2.	.91		ــ		+			+		+						$\dashv$		Operate F Operate E		$\neg$	
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98	_ <u>_</u> _	48	105		95	<u></u> 1	160	<u> </u>	5,736	<u>:</u>	<u></u>	17	<u>_</u>		5,753	\$			_	3.375	@ 2003	9.0	25 (c	<u>0</u> 5950
MD	INÇL.	AZIMUTH	TVD	SECTION	N+/S-	E+/\	w. 1	DŁS	TOOL	_	SI MD	URV		AZIA	MUTH	т	VD	SECT	rion	N+/S-	E+/W-	DL	s	TOOL
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				- CUD						_	DAIL	YAC	CTIVIT	ŤΥ									_	
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10:30		1			ump hi-														arga,		MIII	and the same		
11:30	14:00	2.50			run 13 :			<u>g</u>		_							<u> </u>	)   V		<u>LJL</u>	Viii	And and		
14:00		<del></del>			ectional			k	Caci			- and		.n ea						-				
15:00		<del></del>	Heic	d satet	ty meeti	ing w	/IIII r	rank:	61# S	Ing T&	C-US	WA	set (	<u>ip sai</u> ന 20	03.26' F	KB. Float	Collar @	1955	.41					
16:00	21:00	5.00			ntralizer														_					
21:00	22:00	1.00	Helo	d safet	ty meeti	ing w	vith H	lallibu	urton (	Cer	mente	ers, r	rig up	p Hal	lliburton	Circ. He	ad and wa	ısh 2'	' to	bottom	1.			
22:00	0:00	2.00	Rig	up and	d ceme	nt 13	3-3/8	·WIT	ГН-595	5-S	KSF	IIFIL	LVC	EME	ENT-1#/	/SACK GI	RANULITI	E-W/	Rq-	23.36-	Yeild=3	.86-	LBS	/GAL-
			TAII	_ WITI	1-475-5	3KS	PRE	M PL	US-19	<u>%C</u>	ACL2	.,.25°	%FL(	OCE	LE, 1#	GRANUL	ITE-W/Rq	-5.2L	)-YE	EILD=1	1.18-LB	s/Ga	<u>  =1:</u>	5.6 DIT
		<del>  </del>	Disp	place v	Vith 29	7.9 B	BLO	OT III.	10 15 F	RBI	) PLU I S OF	- CL	ASS	GCI	EMENT	r=TOP JC	OX-118-B DB- CEME	NT [		NOT F	FALL	<u> </u>	.v	F11.
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PUMP NO.	MANUF	FACTURER	LINER	STROKE LENGTH	E GAL/STK	K SPM		PM A	AV DP		/60	PUM		MTR DIFF PRESS.		PIN		JU			上	δ <sub>μ</sub> .	10.
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DAYS F/	/ SPUD	PRESEN	NT OPERATION					FAL DEPTH	гн		1	GRESS 284	<u> </u>	DRILLI	LING TIME	12.6	i	FOR	RMATION Navajo		лтн. ог 68	ертн 840	
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BIT S	SIZE N	MFG.	TYPE	IADC	SERIAL	L NO.	JE	JETS (1/32) or TFA			IN		OUT	FOOTAGE	HOURS	ROP	_	MTR	R RPM RT+MTR	WOB	T DI		G
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Both	<u></u>		<u></u> _		<u></u>	250	74	10	65	75	<u></u>	1240	<u> </u>	140 GEOLOGIO			<u></u>	_	<del></del>	GENER	<u>- الاح</u>	WF.	
вотт	OMHOLE AS		DRILL ST		O.D.	I.D	<u>.</u>	FOR	RMATIO	N		MD	$\Box$	TVD		LITHOL	OGY	=			G INFO		
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	ssembly		+	8.79		<del> </del>		{ <del> </del>	n Cree				<del> -</del>		!	<del> </del>			Cell No	iorren BOP Tesi		18-64	545-6671 
5 - 6 5/ 19-5" H	/8 HWD	<u>P</u>	149 577	9.72 7.67		+-	-	BOTTON	lavajo rau awa		BG	GAS	<u></u>	GAS DATA CONN G	~**	TRIPG	CAS	$\dashv$	<b>⊹</b>	BOP Tes		<del></del>	
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98		48	100	<u></u>	95	160	<u>) I</u>	5,	5,736	<u></u>		17 RVEYS		5,753	3	<u></u>	<u> </u>		_ ∠∪ رہ	@ 123'	10.	310	@ 200
MD	INCL.	AZIMUTH	TVD	SECTION	N+/S-	E+/W-	. DL:	S T	TOOL	MD		INCL.		AZIMUTH	Т	TVD	SECT	TION	N+/S-	E+/W-	₽	LS	TOOL
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DATE			WELL	7000	70.00	·,	CONT	TRACT						CO	UNTY, STA	E	SPUD DATE	1	AP#			s	SUPERVIS			
0	6/04				R 17-7		<u> </u>			Rig #	111		OGRE		evier, U		6/1/05 ING TIME	43-0 ROP	<u>141-3</u>		40 RMATION	丄		G U		<u>n</u>
DAYS	F/SP		PRESEN'	T OPERATION	ONS @ MIC Drilling				TOTAL D	ертн 1,361		FR		ess 207			7.00	12.2			Navaj				40 ı	md
	4				Dimas	<u> </u>		<u> </u>		1,00		<u> </u>		DATA						<u>—</u>						
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віт	ŞIZ	E M	FG.	TYPE	IADC	SERIAL	NO.			(1/32nd*) TFA		7	IN	OUT	FOOT	AGE	HOURS	ROP		MTR	RPM RT+MT		WOB	T	B B	G
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_	Assembly 128.79 TWIT Creek  6 5/8 HWDP 149.72 Navajo Last BOP Test  Nevt BOP Test																									
	- 6 5/8 HWDP 149.72 Navajo Last BOP Test 9-5" HWS 577.67 BOTTOMS UP TIME BG GAS CONN GAS TRIP GAS Next BOP Test Last Safety Meeting 6/4																									
	149.72   1															6/4										
_	9-5" HWS 577.67 BOTTOMS UP TIME BC GAS CONN GAS TRIP GAS Next BOP Test  ars 32.15 SHOWS Last Safety Meeting 6/4																									
	HW				2.91		+		$\dashv$	GAS UN	1113		FRO	- M							Last (	Ope	erate P	ipe i	Rar	
хо				<del> </del>			+		$\dashv$			-		$\neg$							Last (	Ope	erate B	slind	Rai	
	tal Bl	<u></u>		1,012	50							$\dashv$			****								erate A			
	ING W		BHA WT.	PUWI		SO WT.	ROT.	TORQ	iÚE GP	RD. ELEV	/ATIO	N G	L TO	КВ	КВ	LEV	ATION	INTERMEDI	ATE CS	SG	LAST					CASING
	87		48	95		85		150		5,736	6		17	<u>'</u>		5,75	3			_	20"	@	123	13.3	375	@ 2000
														VEYS					Less	TION	N+/S-	_	E+/W-	DL	• T	TOOL
М		INCL.	AZIMUTH	TVD	SECTION		E+/	$\neg$	DLS	TOOL		MD	┌╬	NCL.	AZIMUTI	<u> </u>	<u> </u>	VD	SEC	TION	14773-	Ť				
1,2		5.20	227.50		51	-14	-5		1.41 2.45	MWI	∤-		⊢				<del> </del>		┢			十	$\neg \neg$			
1,3	<u> 19  </u>	6.20	258.50	1305	70	-23	-6	<u>'</u>	2.45	LIVIVVE		5411	ᅜ	ACTIVI	TV .	_			<u> </u>					=	_	
FRO				LAST	24 HOURS	ş.						DAIL	. 1 /	CIIVI	11	_				_						
0:0	_	17:00	17.00			vey 11	54 to	136	 31			,														
17:	_	17:30	0.50			, no pu				vis s	we	ep to:	sur	face.												
17:		18:00	0.50			ump dr			<u> </u>									00:	9 500	~ t p=	and thereto i	يحي	<del>,,,,,</del>			
18:		19:30	1.50		ОН														Town or the second			HIGH.	1			
19:		20:30	1.00			ut MWI	D, lay	/ do	wn m	ud mo	otor.								V &	1 6	16.1	Ç [	1111	Awan		
20:	_	21:30	1.00	Pic	k up ne	ew mot	or, R	R bi	t and	test N	JWI	D and	mo	otor.												
21:		23:00	1.50	TIH																						
23:	_	0:00	1.00	Rea	am fror	n 1260	to 13	361																		
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24.00

Daily Total

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Ope	rator:		ne G&O C					DA	ILY	/ C	R	LL	INC	F	REPOI	RT				midnigh			t
DATE	5/03/05	WELL.	KMF	R 17-7		COI	NTRAC		t Rig	#11	11				ity, STATE rier, UT	6/1/05	43-0	AP# 041-3	300		SUPERV	G Ui	
	F/SPUD		NT OPERAT	IONS @ M Drillin				TOTAL	<sub>DEPTH</sub> 1,15			PROGI	RESS 384		1	ING TIME 3.50	ROP 16.3		FOF	RMATION Navajo	1	гн. DEP 684	тн 0 md
F													DAT				Largue	Lou	LORK	350 T	ALÇIUM	мвт	SALT PPM
	VT .8	vis. 32	WL		ск 2/32	<b>РН</b> 9.0	-	SAND 0.50	<del></del>	4.30		PV 5		ү <u>р</u> 9	GELS 6/8	934	DATE/TIME 6/3 8 am	+	05,0		2600	MBI	SALIFFM
F												BIT	DAT										
BIT NO.	SIZE	MFG.	TYPE	IADC CODE	SERI	AL NO.			6 (1/32nd or TFA	d")		IN	°	UT	FOOTAGE	HOURS	RÓP		MTR	RPM RT+MTR	WOB		CONDITION B G
111	7.500	stc	хрус	417	mr	5451	2	8	28	28	/22	137	<u>'                                    </u>		1017	50.50	20.1 #DIV/0		Y	45/130	32	$\vdash$	
-				<u> </u>	+												#DIV/0						
													工				#DIV/0	!					`L
									DRA								2				SLOV		P m   100 spm
PUMI NO.	MAI	NUFACTURER		STROKE	4		РМ	GPM	AV	DP	AV		PUMP PRESS.		MTR DIFF PRESS.	НН	P / IN <sup>2</sup>	EC	טנ			70 SJ	11 100 spir
1	-+	National National	6" 6"	8.5 8.5	2.96	-	25 25	370 370	╂		<u> </u>	+							-	2	140	150	
2 Both	<del></del>	National	┼-	6.5	2.50		50	740					1110		100							·	
_			RILL S	TRING				$\Box$						7	EOLOGIC						GENER		FO
-		ASSEMBLY	LENG		O.D.	Д	I.D.	-	FORM			M	ID .		TVD		LITHOL	OGY		Rig No		Unit	11
17 1/3 Dir. A	ssemb	oly	+	0.00		+		1	Twin (											Cell No		918	-645-6671
-	5/8 HW		12:	2.12					Nav	vajo				L_	GAS DATA		<u></u>				OP Test		
	HWS		+	7.00		+		BC	TTOMS	S UP 1	TIME	BG (	GAS	F	CONN	GAS	TRIPG	SAS		ļ	OP Tes afety Me		6/3
Jars 4-5" l	-IW		+	2.00		+		1	GAS	UNITS		FR	OM		SHOWS		ROP (FT	/HR)			OP Drill		
																					perate F		
			07/	2 00			******	$\bot$						L					$\dashv$		perate E perate A		
	BHA:	BHA WT.	PUW	2.62 r.	SO WT.		. TORC	DUE G	RD. ELE		ON	GL T			KB ELEVA		INTERMEDIA	ATE CS	G	LAST	ASING	NE.	CT CASING
8	5	48	85	l	85	<u> </u>	150	L	5,7	36		ene	7 RVEY		5,75	3				20" @	) 123	13.37	5 @ 2000
MD	INC	L. AZIMUTI	TVD	SECTION	N+/S	- E+/	w-	DLS	то	OL .	M		INCL.		AZIMUTH	T	VD	SECT	ION	N+/S-	E+/W-	DLS	TOOL
925				34	-6	-3	-	1.48	MV	-	1,1	12 !	5.20		227.50	11	109	52	2	-14	-51	1.41	MWD
1,01	7 5.4	0 241.90	1014	43	-9		4	2.00	MV	VD	<u> </u>		ACTIV	//TV		<u> </u>							
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0:00				ll & sur		70 to	984										- Mini		17	TAIT	-111		
11:30				servic II 984 t		4						···				<u></u>	<del>-600</del> N	1					
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<b>-</b>	+	+															<u></u>						
Daily	Total	24.00	<u> </u>																				

a		Engi	neering	j & Su	pervisi	ion							ing, Inc		<u> </u>		(	918) 59	<del>)</del> 9-9400	)		
<u> </u>	erator:	Wolverin	ne G&O C					AILY I	D	RIL'	LIN		REPO			24 hr		midnigh	ht to mi			
DATE Of	6/02/05	WELL	KMF	R 17-7		CONTRA	Uni	nit Rig #1	11			Sev	UNTY, STATE EVIER, UT	SPUD DATE 6/1/05	43-0	4P# 041-3	3004		DL Na	laylo	or/G	G Urbar
	F/ SPUD	PRESEN	NT OPERATI	IONS @ MI		1		т DEPTH 770	<u>-</u>		OGRESS	ss	DRILLI	LING TIME 3.00	ROP 23.5			RMATION Navajo		лтн. bi	БЕРТН 840	
<u> </u>	2	<u> </u>		Drilling	<u>a</u>		<u>—</u>		<u>=</u>	<del></del>		DATA		3.00		_	<u></u>	Nav.,		_	<u> </u>	IIIG
<del>  _ ,</del>	wt	VIS.	WL	工	СК	PH	SAND	SOLIE	DS :	% Р	PV	ΥP	GELS	DEPTH	DATE/TIME	-	HLORIC		CALCIUM	мвт	S	SALT PPM
	9.7	30	<u> </u>	2	2/32 1	11.0	0.50	4.0	.00		2	4	3/5	465	6/2	9	98,00	)0	2540	<u></u>	<u></u>	
207	SIZE	MFG.	TYPE	IADC	SERIAL	NO.	JET	TS (1/32nd*)	_		BIT DA	OUT	FOOTAGE	HOURS	ROP		MTR	R RPM	WOB			CONDITION
NO.		MrG.	lire.	CODE				or TFA				<u> </u>	_					RT+MTR	R	T	В	G
1 1	17.500	stc	xpvc	417	mr54	.51   .7	28	28	28	11:	137	<del></del>	633	27.00	23.4 #DIV/0		Y	45/130	0 28	+	+	<del> </del>
$\vdash +$	-+			<del> </del>	+	-	-+		—	+	$\dashv$		+	<del> </del>	#DIV/0		+	<del> </del>	<del> </del>	+	+	
-	-	-		<del> </del>	+				_	工	J				#DIV/0					上	$\Box'$	
							H	YDRAUL	īc	. <u>s</u>	=					=	_		SLOW			
PUMI		UFACTURER	LINER	STROKE		K SPM	GPM	M AV DP	T	AV DC	PUM	- 1	MTR DIFF PRESS.	HH	IP/IN²	EC	CD		67 spm	76	spm	100 spm
NO. 1		lational	6"	LENGTH 8.5	2.96	125	370		+		PRES	ss.	PKESS.	1			—	1	<u> </u>	+		<u> </u>
1 2		lational	6"	8.5	2.96		370		1			士					$\overline{}$	2		上		
Both		4				250	740	丁	I	'	950	0ز	100				/			_		
			ORILL ST				耳		_		<u> </u>		GEOLOGIC		177401	• 40			GENER	RAL GINFO		5
	TOMHOLE A	ASSEMBLY	LENGT	тн 1.50	Ö.D.	I.D.	-	FORMATION			MD	+	TVD	<u>'</u>	LITHOLO	0G1		Rig No			it 111	1
	2" bit Assembly			0.00		<del> </del>		Twin Cre										Cell No				345-6671
	5/8 HWE	* ,	<del></del>	0.00				Navajo		工		工	CLOOKIA			_		<del> </del>	BOP Test			$\Box$
19-5"	'HWS		+	7.00			B	BOTTOMS UP	PTI	WE E	BG GAS	5	GAS DATA CONN G	SAS	TRIP G	SAS	<b>=</b>	·	BOP Tes			
Jars			32	2.00		<del> </del>	<u> </u>						SHOWS				=	<b> </b>	Safety Me		9	6/2
<u> </u>			<del> </del>	+		-	-F	GAS UNIT	rs	干'	FROM	一	10		ROP (FT	/HR)	$\overline{-}$	<u> </u>	3OP Drill Operate F		Rar	
<del> </del>			<del> </del>	+		+	-		_	+	—	+							Operate E			
	al BHA:			0.50						士		工						Last O	Operate A	Annu	ular	
STRIN	NG WT.	BHA WT.	PU WT	т.	\$0 WT.	150		GRD. ELEVA		N GL	17	3	KB ELEVA 5,753		INTERMEDIA	ITE Co	iG		© 123'	+		@ 2000
	67		75	<del></del>	75	1 100	<u></u>	0,700	<u>—</u>	<u></u>	URVE	<u>_</u>	<u> </u>						<u> </u>	<u> </u>		<u></u>
MD	INCL.	AZIMUTH	TVD	SECTION	N+/S-	E+/W-	DLS			MD	INCL	CL.	AZIMUTH		rvo	SECT			E+/W-	1	LS	TOOL
557	2.90	<del></del>	+	3	-4	-2	2.18		⊣⊢	741	6.00		271.00	<del></del>	40	14	_	-4	-14	_	.34	MWD
649	4.00	280.00	648	8	-5	-6	3.26	6 MWD	<u>业</u>	835	6.70		267.00	<u>ŏ</u> ,	334	24	4	-4	-25	<u> </u>	.86	MWD
FROM			LAST	T 24 HOURS					_	DAIL	γ̈́Au	CTIVITY	<u>Y</u>				_			_		
0:00		6.00			rvey fror	m 230 '	to 435	j												_	_	
6:00	6:30	0.50	Wo	ork on n	mud pur				_			_					A Tabasan			The state of the s	_	
6:30	_			II 435 to					_						UUI	11	i L	1614	Secure Se	knazo		
16:30		_		g servic	ce rvey 648	9 to 77/														—		
17:00 0:00		7.00	,,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	1 & Sui	Vey one	) lu , , ,	<del>'</del>		_								_				_	
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0:00		4	<del></del>												<del></del>	#	W	سلل	11 1-		—	
0:00		+																		_		
Daily		24.00	·						_					,,						_		

Operator   Work-wester   Montaning   Work    -	DAILY DRILLING REPORT 24 hrs - midr														918) 59	9-9400	)							
STATE	Or								DA	AILY '	DF	<b>ILI</b>	LIN	IG F	REPO	RT		24 h	rs -	 midnigi	ht to mi	idnigi	nt	
Control   Cont			<u>,, , , , , , , , , , , , , , , , , , ,</u>		Ile Guo C.	J 01 C		CONTR#					$\overline{}$	COUN	NTY, STATE	SPUD DATE	T	AP#	#		SUPERV	/ISOR		
1   Dilling   1   Dilling	C	06/01									111	1582												rbar
The color   The	DAY			PRESE					TOTAL			PKU							′~		- 1			d
March   Marc		<u> </u>		<u> </u>		Dima	9		<del></del>		<u>—</u>	<del></del>												_
Major   Majo	<del> </del>	WT	—	VIS.	- WL		СК	PH	SAND	SOL	IDS %				GELS	DEPTH	DATE/TIME	Cŀ	ILORII	DES (	CALCIUM	мет	SALT	PPM
No.   No.			I							<u> </u>	_	$\prod$			<u></u>			<u> </u>				<u> </u>		
1	E	=	_	_											· FOOTAGE	LIQUIDE	1 000		1,,70	T DOM	T WOR	T DII	L COND	MOITION
1		SIZE	E M	IFG.	TYPE			NO.				11	Ī	Out	FOOTAGE	HOURS	KUF		MIN	L				
	-	17.5	00	stc	хрус			151			28	17	37		93	4.00	23.3		ŢΥ	45/130	28	Ц		
No.   No.		_	I	I								$\perp$	$\perp$						$\downarrow$	<del> </del>	<u> </u>	$\coprod$		
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National   Color   National						<u></u>						<u>_</u>			<u> </u>	<u> </u>	#DIV/U	)!	<u></u>	<u> </u>	<u> </u>		<u></u>	
National   6"   8.5   2.96   125   370	匚						107						2011		ATTR DISE	Т н	LID / IN( <sup>2</sup>	TE	CD	<del>                                     </del>				O spr
National   6"   8.5   2.96   125   370	ı	- 1	MANUFA	ACTURER	LINER	1	1	SPM	GPM	I AV UP	'   ^\	V DC				****	P / 184	`			01 3p		<u></u>	J 0p
Point   Poin	-		Na'	tional	6"	<del> </del>		125	370	3 <del>                                    </del>	1	$\neg \uparrow$	Г							1			$\mathbf{I}$	
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DRILL STRING	-		•	10112	+	<u> </u>	+		<del></del>		T			I										
	F	<u></u>			DRILL S'	TRING			一		=	_	=	=				_					NFO	_
17   17   17   17   18   18   18   19   19   19   19   19	ВС	TTOM	HOLE AS		LENGT	тн		I.D.	丰			二	MD	干	TVD	,	LITHOL	OGY					114	
120.00   1	17 1	/2" b	it					<del> </del>				4-		+			<del> </del>			11 ~				007.
Note   Note	_						<del></del>		<b>—</b>  -			+-					<del> </del>			l			3-645-0	867
Control   Cont	4 - 6	5/8 ز	HWDF	<u>P</u>	120	).00		<del> </del>	<del></del>		-	<u></u>			GAS DATA				$\exists$	( <del>                                     </del>			+-	
Streight   Streight	<u> </u>					+		<del> </del>		SOTTOMS UP	PTIME	ВС	G GAS	干	CONN G	AS	TRIP	SAS	$\exists$	<u> </u>			<del>.   -,</del>	6/1
Control   Cont	<u> </u>					-		<del> </del>			_	<u></u>		<del>_</del>			J PARIE		=	<u> </u>	<u>-</u>		+	<u>, , , , , , , , , , , , , , , , , , , </u>
Total BH	<del> </del>				+-	-		+		GAS UNI	is	<del>                                     </del>	ROM	+			nor ,.	/HK,	$\neg$	<del> </del>			₹ar	
Total BH   Fire   Fir					+			<del> </del>	-			+		+			<del> </del>			<del></del>	<del></del>		_	
STRINGN   BIAWT   PUW   SO WT   NOT DROLLE   GROLE ELVATION   STATE    To	tal B!	HA:		1 24	1 50						+		+						Last O	perate /	Annui	ar		
No.   No.   AZAMUTH   TVD   SECTION   No.7.5   E+7/W   DLS   TOOL   MD   MOL   AZAMUTH   TVD   SECTION   No.7.5   E+7/W   DLS   TOOL   MD   MOL   AZAMUTH   TVD   SECTION   No.7.5   E+7/W   DLS   TOOL   MD   MOL   AZAMUTH   TVD   SECTION   No.7.5   E+7/W   DLS   TOOL   STR	ING W	1. P	3HA WT.			SO WT.	ROT. TOP	RQUE					丰			INTERMEDIA	ATE CS	SG	II		+			
MO						Щ.	<del></del> '	<u> </u>		5,736				<u></u>	5,753	3	<u> </u>			20° @	<u>)</u> 123	13.3	75 @ Z	2000
Mot.   Mot.				T = 3.0.0	<del></del>		1		1 716	7001					4.7% # ITH	<del></del>	T/D	T SEC	MOLT	N+/S-	F+/W-	T DL	s T	rooL
345   0.70   136.50   345   0						1						<b>MD</b>	INCL.	+	AZIMOTA	<del></del>	<u>VB</u>	JEC	110.1	,,,,,		T-	$\top$	
FROM   LAST 24 HOURS		_		+				1 —		<del></del>				+										
FROM	Ĭ											DAIL	YAC	TIVIT				_						
15:00 18:00 3:00 PU BHA & test MWD  18:00 19:00 1.00 Drill 120 to 147  19:00 21:00 0:00 3:00 Drill & survey 147 to 230  20:00 □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	FRC	MI			LAST	24 HOUR	dS:				_		_					_					_	
18:00         19:00         10:00         Drill 120 to 147           19:00         21:00         20:00         Change MWD           21:00         0:00         3:00         Drill & survey 147 to 230           0:00			15:00	15.00		<del></del>														-				
19:00         2:00         Change MWD           21:00         0:00         3.00         Drill & survey 147 to 230           0:00	15:	J0 1	18:00	3.00				IWD										112 8 7		4 1 1 A	<del>2 ( )</del> ()	-		
21:00         0:00         3.00         Drill & survey 147 to 230           0:00         0				<del></del>														H	}			3 0 2		
0:00       □         □       □         □	_																	_			. 1 24 .	i Zum		
0:00       Start Day Rate @ 15:00 6/1/05         0:00       Spud @ 18:00 6/1/05         0:00       0:00         0:00       CONFIDENTIAL	_		0:00	3.00	Uni	I & sur	vey 141	/ to 230	<u></u>	···								—						
0:00         Start Day Rate @ 15:00 6/1/05           0:00         Spud @ 18:00 6/1/05           0:00         O:00           0:00         O:00 <td>_</td> <td></td> <td></td> <td><del></del></td> <td>+</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>—</td> <td></td> <td></td> <td>·</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	_			<del></del>	+							—			·									
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**EXACT Engineering, Inc.** 

www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E. Registered Professional Engineer stevehash@exactengineering.com

#### CONFIDENTIAL PLEASE!

June 18, 2005

Mr. Dustin Doucet Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, UT 84114-5801

Re:

Wolverine Kings Meadow Ranches 17-7 well

Sec 17 T23S R01W Sevier Co., UT API# 43-041-30040

Dear Mr. Doucet.

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from June 8, 2005 through June 17, 2005. We are drilling near 5800' and expect to set 9-5/8" casing at approximately 6050'. We respectfully request that the enclosed information remain confidential.

Very Truly Yours, Steven 72. Hash

Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Helene Bardolph

EXACT Engineering, Inc.

well file

- Vie, who & MINING Petroleum Engineering Consulting, Personnel & Jobsite Supervision complete well design, construction & management, drilling, completion, production, pipelines, appraisals, due diligence, acquisitions, procedures, temporary personnel and field supervision

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ко			1	2.91						+-		+							perate perate		<del></del>
Total E				7.98														Last C	perate	Annula	r
STRING V	-	BHA WT. 48	PUW 170	_	50 WT.	ROT. TO		GRD. ELI	EVATIO	N G	L ТО КВ 17	F	KB ELEVA 5,75		INTERMEDI	ATE CS			CASING @ 200	+	T CASING 5 @ 5950
			1					5,7		S	URVE	YS	0,10	-			11.		سے دران	1 0.02	- W 0300
MD	INC		<del> </del>	SECTION		E+ / W-	DL		OOL	MD	INCL	1	AZIMUTH		VD	SECTI		N+/S-	E+/W-		
4,300 4,395	14.6	+	+	842 865		-760 -781	1.4		_	4,489 4,584	15.70		243.00 242.00		372 164	890 914		-388 -399	-803 -825	1.39	
.,000	, 7,7	- Interior	1,201	, 500	1 0,0	1	1	1 1919	<u>    -</u>		Y ACT				, • •	312		000	_ 525	1 1.30	. I WWD
FROM		T		T 24 HOU		.or- 1	140	440	7					- · · · ·							
0:00 4:00	4:0 5:0				Survey fi n # 2 pu					er da	sket										
5:00	15:3				n 4187					J. 90											
15:30	16:0			g Ser																	
16:00	0:0	8.00	Dri	ill froi	m 4470	to 462	3														
			1	·	****																
															· · · · · · · · · · · · · · · · · · ·						
		_	-																		
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															CON		E	M	AL		
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Daily To	otal	24.00	<u></u>																		
										co	ST DA	ATA									

	,	Engi	neering	& Sup	ervisio	n	ĺ	XA	СТ	Eng	gine	erii	ng, Inc.				);	918)	599-940	0	
Opera	tor:	Wolveri	ne G&O (	o of Uta	ah. LLC		DA						REPO			24 hr	_	- <u>'</u>	ght to m		
DATE		WELL		70 0. 0	,	CONTR				<u> </u>			NTY, STATE	SPUD DATE		API#		mann	SUPER		
06/ DAYS F/	14/05	-		R 17-7				it Rig #	‡111		$\perp$		vier, UT	6/1/05		41-3				G Urb	
l .	14	PRESE	NT OPERAT	Drilling			TOTAL	DEPTH 4,112	,	PRO	OGRESS 282			ING TIME	20.1		l	MATIO	1	JTH. DEPT. 6840	
_					,		<u> </u>	7,112		М	UD D			.00	20.1		<u> </u>	Nava	10	0040	mu
WT		VIS.	WL		CK	PH	SAND	so	LIDS %		ob <i>b,</i> >∨	YP	GELS	DEPTH	DATE/TIME	СН	LORID	ES	CALCIUM	мвт	SALT PPM
10.	1	32	<u> </u>	2	/32 9	9.0	0.50	5	.00		4	9	5/8	3990	6/14 8am	13	31,00	ю	2460	] ;	216,150
BIT S	SIZE	MFG.	TYPÉ	1400	SERIAL	100.1				_	IT DA			<b></b>							
NO.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	WIFG.	1176	CODE	SERIAL	. NO.	JE	S (1/32nd* or TFA	,		IN	OUT	FOOTAGE	HOURS	ROP		MTR	RPN RT+M		T B	G
	.250	RTC	HP43A	437	B735	41	24	24	24	33	306		806	33.00	24.4		Υ	35/1	30 40		
4	-+				<u> </u>			$\rightarrow$			_				#DIV/0		Ш				
5				<u> </u>			$\dashv$			+	-				#DIV/0	_				+	ļ
				<u> </u>									<u> </u>	<u> </u>	#DIV/0	!	Щ				<u> </u>
PUMP	MANU	FACTURER	LINER	STROKE	GAL / ST	SPM	GPN	YDRAU		AV DC	PUM	ΡĪ	MTR DIFF	Г	P / IN²	EC	D.	$\overline{}$		N PUMP	100 spm
NO.	<u> </u>		ļ	LENGTH		ļ	<u> </u>		$\perp$		PRES	- 1	PRESS.			L			-, opi	, , , opi,	.00 0011
1		ational	6"	8.5	2.96	125	356		_			_						1	240		
2 Both	l N	ational	6"	8.5	2.96	125	356		+	155	400	+	250			<u> </u>	_	2		270	<u> </u>
Both	<u> </u>		DRILL ST	DINO	L	250	742	133	5	155	180		250				l				
вотто	MHOLE.	ASSEMBLY	LENG		O.D.	i.D	$\dashv$	FORMA	TION	$\overline{}$	MD	<u> </u>	GEOLOGIC TVD		LITHOL	.OGY	┩			RAL INF	0
12 1/4	Bit		1	.08	12.250			Arapie	ean									Rig I		Unit 11	1
Dir. As			114					Twin C	reek	_								Cell	Ncrren	918-6	45-6671
5 - 6 5/		)P	149		7.625	<del>                                     </del>	250	Nava		Щ			GAS DATA				_		BOP Tes		6/9
19-5" F Jars	1005		577	.15	6.250		125 E 750	оттомѕ	UP TIM	E 8	BG GAS		CONN	SAS	TRIP	SAS	=		BOP Te		7/9
4-5" HV			119		6.625		250	GAS U	uite		FROM		SHOWS		500 (51				Safety M BOP Dril		6/14 6/10
хо			<del> </del>	.91		ļ. <u> </u>		GAS O	<b>VIII</b> 3	<del>                                     </del>	FROM	+	то		RÓP (F1	(/HR)	$\neg$		Operate		0/10
																			Operate		
Total		BHA WT.	997		O WT	DOT TO		000 ELE	<b>(4710)</b>		TO 100								Operate		
140		48	165		125	170		3RD. ELEV 5,73		1 6	17		KB ELEVA 5,75		INTERMEDIA	ATE CS			T CASING 5" @ 200	<b>-</b>	CASING
							!1			SI	JRVE	YS	0,10					0.07	<i>y</i> (@ 200	9 0.020	<u>@</u> 5350
MD	INCL.	AZIMUTI	TVD	SECTION	N+/S-	E+/W-	DLS	TOO	<u> </u>	MD	INCL		AZIMUTH	Т	VD	SECT	ION	N+ / S	E+/W-	DLS	TOOL
3,923	15.20		<del> </del>	735	-315	-666	1.24	-	┪	,111	17.10	0	239.70	40	07	79	0	-338	-716	2.48	MWD
4,018	17.90	246.90	3919	762	-325	-691	2.85	MW											<u> </u>	<u> </u>	MWD
FROM		T	LAST	24 HOUR	S:					DAIL	Y ACT	TIVITY	<u> </u>						-		
0:00	5:00	5.00	Dri	ll & Su	rvey fr	om 38	30 to	3950													
5:00	6:00	<del></del>		ork on																	
6:0-0	7:00			II & Su			50 to	3970													
7:00 7:30	7:30 8:30			ork on I			<u> </u>								<del></del>						
8:30	9:00		_	servi		033									<del></del>						
9:00	9:30	0.50		ll from		to 401	)														
9:30	10:00	0.50	· · · · · · · · · · · · · · · · · · ·	rk on p																	
10:00		<del>                                     </del>		ll from		to 403	)											-			
11:00				mp dry	*	41							···								
11:30 13:00	13:00	+		OH 22 place r					mp												
16:00	18:00		TIF		nouult	, OII #	puii	Ψ.						M	WEIN	Ch	(IT	1	<del>                                     </del>		
18:00	20:30			ll from	4030 t	to 4062	2							<del></del> ₩	<del>JIYI IU</del>		11	IA		<del>,</del>	
20:30	21:00			rk on I				hydrill						·							
21:00	0:00	3.00	Dri	ll from	4062 t	o 4112	2														
	····			) % SI				4112													
D-": -		10100	<del> </del>	M DRI	LLING	@ 42	J2'														
Daily T	otal	24.00										-								<del>.</del>	
										CO	ST DA	\TA									

	•	Engi	neering	& Sup	ervisio	on	ĺ	XA	СТ	En	gine	eri	ng, Inc.	•		`	19	918) 5	599-940	0	
Opera	itor:	Wolveri	ne G&O (	Co of Uta	ah, LLC		D						REPO			24 h			ht to mi		
DATE	40.00	WELL	1/0.41			CONT	RACTOR				Т		NTY, STATE	SPUD DATE		API			SUPER		
DAYS F	13/05 SPUD	PRESE	NT OPERA	R 17-7 TIONS @ M	IDNIGHT	J		nit Rig	#111		OGRESS		vier, UT	6/1/05 ING TIME	43-0 ROP	)41-3		0 MATION	I IAL	G Urb	
	13			Drilling	J			3,83	0		524	1	19	0.00	27.6		ł	Nava	- 1	6840	
W		VIS.	T wi								UD D/						•				
9.9		29	VVL	_		РН 9.5	0.50		5.00	/	3	YP 5	GELS 3/5	3435	6/13 8am	1	16,00		CALCIUM 2460	<del></del>	SALT PPM
		_									SIT DA		1 0.0	0.00	or to barr		70,00		2400		74,900
BIT S	SIZE	MFG.	TYPE	IADC	SERIAL	NO.	JE	TS (1/32nd	i")	T	IN	OUT	FOOTAGE	HOURS	ROP		MTR	RPM			CONDITION
	.250 F	ятс 💮	HP43A	437	B735	541	24	24	24	3:	306		524	19.00	27.6		Y	8T+MT 35/13		T B	G
4				ļ											#DIV/0	ļ				11	
5				<u> </u>	-	$\dashv$				4					#DIV/0	!					
				<u> </u>				10/254					<u> </u>	L	#DIV/0	!					ļ
PUMP	MANUE	ACTURER	LINER	STROKE	GAL / ST	K SPM		M AV		AV DC	PUMF	, T -	MTR DIFF	НН	P / IN²	EC	D D	T		V PUMP	100 spm
NO.	<del> </del>	Man - 1		LENGTH		<u> </u>	-		$\bot$		PRES	S.	PRESS.			<u> </u>		L		Japan	
2	1	tional tional	6" 6"	8.5 8.5	2.96	125 125			+		$\vdash$	+				<del> </del>		1	190	<del> </del>	
Both	1,10		<b>├</b> ॅ	5.5	2.50	250	_		3	155	1700	,	250			<del>                                     </del>	$\dashv$	2	Ц	220	I
		1	RILL ST	RING							.1		GEOLOGIC	 ;					GENER	RAL INF	0
вотто 12 1/4		SSEMBLY	LENG		O.D.	Ϋ	D.	FORM		<b>T</b>	MD	T	TVD		LITHOL	OGY			RIC	SINFO	
Dir. As:			+	1.08	12.250	<del> </del>		Arapi Twin C		+		+						Rig N	lo Varren	Unit 11	
	8 HWD	P		0.72	7.625		5.250	Nava		+		+							BOP Tes		45-6671 6/9
19-5" H	IWS		577	7.67	6.250		3.125	BOTTOMS	UP TIN	VE I	G GAS	Ī	GAS DATA CONN G	AS	TRIP	SAS			BOP Tes		7/9
Jars				2.15	6.313	<del> </del>	2.750						SHOWS					Last S	Safety Me	eting	6/13
4-5" HV xo	N .		119	2.91	6.625		3.250	GAS U	NITS	-	FROM	-	TO		ROP (FT	/HR)	=		OP Drill		6/10
				91		<del> </del>				+-		+-							Operate l Operate l		
Total I			997															Last (	Operate A		
STRING 123		BHA WT. 48	150		ю wт. 120	ROT. TO		GRD. ELE 5,73		N G	17	+	KB ELEVA 5,753		INTERMEDIA	ATE CS			CASING " @ 2003		CASING
							<u> </u>			SI	URVEY	/S	5,700	<u></u>				3.373	@ 200	9.625	დ აყაი
MD	INCL.	AZIMUTH		SECTION	N+/S-	E+/W				MD	INCL.	Ţ"	AZIMUTH	77	/D	SECT	ION	N+ / S-	E+ / W-	DLS	TOOL
3,546	18.60 17.60	240.20 242.70		626 655	-267 -281	-568 -594	+			3,734	16.70	+	243.70		46	68	_	-293	-619	1.01	MWD
3,040	17.00	1242.70	3330	000	-201	-594	1.3	3   IVIVV	ه اا م	3,829 DAII	16.20 Y ACT		245.60	3/	37	71	U	-305	-643	0.77	MWD
FROM				24 HOURS	:																
0:00	2:00	2.00	TIF	am froi	m 227	0 to 2	206														
2:00 3:00	3:00 6:30	3.50						to 341	15				<del></del> .								
6:30	7:00	0.50	C/0	) Swat	)#1p	ump															
7:00	8:00	1.00		ll & Su			415 to	3435													
8:00	9:00 17:30	1.00		O Swat			12E +	2604													
9:00 17:30	17:30	8.50 0.50		ction ca									· · · · · · · · · · · · · · · · · · ·								
18:00	0:00	6.00		l & Su																	
	<del></del>	ļ																			
													····	ΛΛ	KIT IN	<b>"\1</b> "	T	11			
														W		<del>  </del>	11/	HL			
			6AI	M DRIL	LING	@ 39	950'		*****												
			De	i	440 1	<u>. ۰</u>	10 45	·#:													
			Ke	ceived	112 jt	is. 9 t	ο/ <b>8 47</b>	# casi	ng.												-
Daily To	otal	24.00	·													·					
•										CO	ST DA	TA					_				〓

	•	Engi	neering	& Su	pervisio	on			<u></u>					ıg, Inc.			_	<i>j</i> 9	18) 59	9-9400		
Operat	or: \	Wolveri	ne G&O	Co of U	tah, LLC			DĂI	LY	)R	ILI	LIN	IG I	REPO	RT		24 hrs	s - m	nidnigh	t to mic	Inight	
DATE	2/05	WELL	1/2.4			CON	NTRAC		D: #4.	4.4				NTY, STATE	SPUD DATE	42.0	API#	20.4/	`	SUPERV		
06/1: DAYS F/ S		PRESE	NT OPERA	R 17-7 TIONS @	MIDNIGHT			TOTAL D	Rig #1	1	PRO	GRESS		rier, UT	6/1/05 NG TIME	ROP	41-30		MATION	AU	G Urba	
1:	2			Drillir	g				3,306			280	-	18	.50	15.1		!	Navajo		6840	md
WT		VIS.	T w		ск	PH		SAND	SOLID	s %	ML	√D D/	ATA YP	GELS	DEPTH	DATE/TIME	CHL	ORIDI	es I c	ALCIUM	MBT S	ALT PPM
9.8		29				9.5		).50	4.5		2		4	2/4	3185	6/12 8am		6,00		2440	<del>                                     </del>	74,900
												T DA										
BIT SI. NO.	ZE N	ИFG.	TYPE	CODE	4	L NO.			1/32nd") TFA		II	N	OUT	FOOTAGE	HOURS	ROP		MTR	RPM RT+MTR	WOB	T B	ONDITION
1 17.5	-	stc	хрус	417	mr5		28		28 28	3/22	13	-	2003	1866	117.50	15.9		_	45/130	45	3 3	-1/16
2 12.2	_	DPI	mp45lt	PDC			6/1		,		20		3306	1303	62.50	20.8 #DIV/0		-	35/130 35/130	12 40	6	-1/8
3 12.2	250 F	RTC	HP43A	437	B73	541	24	*	24	24	33	06		<u> </u>		#DIV/0	-	┧	35/130	40		-
								HYE	RAULI	CS								一		SLOV	/ PUMP	
PUMP	MANUF	ACTURE	LINER		Œ GAL/S	TK SI	РМ	GPM	AV DP	AV	DC	PUM		MTR DIFF	НН	P / IN²	ECI	D		67 spm	76 spm	100 sp
NO. 1	Na	tional	6"	LENGT 8.5	н 2.96	1:	25	356	<del>                                     </del>	t	$\dashv$	PRES	iS.	PRESS.			<u> </u>	-	1	180		
2	-	tional	6"	8.5	2.96		25	356											2		200	
Both					$oldsymbol{ol}}}}}}}}}}}}}}}}}}$	2	50	742	133	15	55	160	0	250								
			DRILL S							50				GEOLOGIC		LITHOL	004	$\Box$			AL INF	0
12 1/4 E		SSEMBLY	LEN	1.08	0.D. 12.25	- <del>  </del>	I,D.		FORMATION Arapiea			MD	+	TVD		LITHOL	JGY	╢	Rig No		Unit 11	1
Dir. Ass			11	4.69					win Cre	$\neg$									Cell No		918-6	45-667
5 - 6 5/8	HWD	Р	14	9.72	7.62	5	5.2	50	Navajo					CAS DATA					Last B	OP Tes	<u> </u>	6/9
19-5" H	ws			7.67	6.25				TTOMS UF	TIME	8	G GAS	-	GAS DATA CONN C	SAS	TRIP	SAS	$\dashv$		OP Tes		7/9
Jars 4-5" HW				9.76	6.31 6.62		3.2		GAS UNIT			FROM		SHOWS		ROP (F	T/UD\	ᅦ		afety Me OP Drili	eeung	6/12
xo	<u> </u>		<del>                                     </del>	2.91	0.02	+	0.2	-	GAS UNI	3		PROM	$\top$	10		KOF (F	(/IIIS)	1			Pipe Ra	<del>                                     </del>
																			Last O	perate	Blind Ra	
Total E		BHA WT.	99 PUV	7.98	SO WT.	ROT	r. TOR	QUE GE	RD. ELEVA	TION	Gi	L TO KI	3	KB ELEVA	TION	INTERMEDI	ATE CS	iG		perate /		CASING
117		48	14		110		170		5,736			17		5,75					3.375"	@ 200	9.625	@ 5950
											Sl	JRVE										
мD 3,166	INCL. 16,90	AZIMU 245.6		SECTION 512			/W- 67	DLS 0.67	MWD	М.	ID.	INC	-	AZIMUTH		VD	SECT	ION	N+ / S-	E+/W-	DLS	MWD
3,262	16.50		+			_	92	0.61	MWD	╁┈			+					┪	-			MWD
- ,									<u>'                                    </u>	D	AIL	YAC	TIVIT	Υ								
FROM				ST 24 HOU			0	000 4	2045											_		
0:00 10:00	10:00 10:30	+		ig ser	1/4 hol	e irc	om 3	026 (	3215													
10:30	19:00				n 3215	to 3	306	<del></del>														
19:00	19:30	0.50					iffer	ential	psi re	am 3	30' 1	to bo	ottom	no drill o	ff.							
19:30	20:00				np dry	job																
20:00	22:00 0:00	2.00			for PR out m	ud m	noto	r. Bit	and ni	ck 11	ıp G	Sami	ma to	ool.								
££.00	0.00	2.00	+	nange	. Out III	uu il	.0.01	, 51,	and pi	J. C U	. p C											
			N	lud mo	otor we	ak tı	ırn t	y har	ıd, bit	had	bro	ken	chip	ped and 2	lost cut	ers.						
		ļ	ļ																-			
		-	-												A A 1	HIDE	117		П-			
		+	+-			.,									<del>():)</del>		M.	11/	1			
																43 10 1						
			6	AM DI	RILLIN	G @	341	0'														
		-																				
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D-9. T	otal	24.0	,													_,						
Daily T																		_				

		Engi	neering	& Supe	ervisio	n	j	)	(AC	TE	ng	jine	eri	ng, Inc.			Ţ	)	918)	599	9-9400		
Operat	tor:	Wolveri	ne G&O (	o of Uta	h, LLC			ΑÍ						REPO			24 hr	rs - 1	nidn	ight	to mid	Inight	
DATE OG/1	1/05	WELL	<b>∠</b> ME	R 17-7		CONT	RACTO		Rig #1	11				INTY, STATE	SPUD DATE		API#		10		SUPERVI		_
DAYS F/		PRESE	NT OPERAT		DNIGHT	1	TTO	TAL DE	NY #1		PRO	GRESS		vier, UT	6/1/05 NG TIME	43-0 ROP	+ I-J		RMATIC	ON	AUT	G Urba H. DEPTH	
1	1	<u> </u>		Drilling				3	,026			599		23	.50	25.5			Nav	⁄ajo		6840	md
wr		VIS.	T WL	1 0	ж	PH	SAN	D I	SOLID	s% T	MU	JD DA ∨ T	YP	GELS	DEPTH	DATE/TIME	СН	LORIE	ES T	CA	ALCIUM	мвт в	ALT PPM
9.6		30		2/	32 1	0.8	0.5	0	4.5	0	3	3	5	3/4	2627	6/10 8am	8	9,00	0	2	340	1	46,850
BIT S	IZE	MFG.	TYPE	IADC	SERIAL	NO. I		JETS (1	(20-45)		Bl	T DA	TA OUT	FOOTAGE	HOURS	ROP		Lucro		1		Launia	
NO.		Wr G.	1166	CODE	SERIAL	NO.		or T				`\		FOOTAGE	HOURS	ROP		MTR	RP RT+N		WOB	ТВ	ONDITION G
		stc DPI	xpvc	PDC	mr54 20160	-	28 6/16	28	8 28	3/22	13		2003	1866 1023	117.50	15.9		Ÿ	45/1	-+	45	3 3	-1/16
2 12.	250	DPI	mp45lt	PDC	20160	194	0/10	+-	- <del> </del>	_	20	03		1023	44.00	23.3 #DIV/0	!	Y	35/1	130			
																#DIV/0							
					,	·			RAULI		_											PUMP	
PUMP NO.	MANU	FACTURER	LINER	STROKE LENGTH	GAL / STI	SPN		PM	AV DP	AV	C	PUMF PRES		MTR DIFF PRESS.	HH	P / IN <sup>2</sup>	EC	D D	Ŀŀ	_	67 spm	76 spm	100 spr
1		itional	6"	8.5	2.96	120		56											1	-	190		
2 Both	Na	tional	6"	8.5	2.96	120 240		56 12	133	15	_	1600	+	250					2	<u>'</u>		210	
Both			DRILL ST	TRING		240		1 <u>4</u>	100	10	<u> </u>	1000	' 1	GEOLOGIC	<u> </u>				_		ENER	AL INF	<u> </u>
вотто	MHOLE A	SSEMBLY	LENG	тн	O.D.	ļ .	.D.	F	ORMATIC	ON .		MD	_	TVD		LITHOL	OGY			`		INFO	
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5 - 6 5/		P		9.72	7.625		5.250	1	Navajo										<del></del>		P Test		6/9
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AU .													+						_			Blind Ra	
Total I		BHA WT.	998 PU W		SO WT.	POT T	ORQUE	CDC	D. ELEVAT	TION		то кв	1	KB ELEVA	TION	INTERMEDIA	ATE C	96			erate A		CASING
115		48	135	-+	105	<del>                                     </del>	00	- GKL	5,736	IION	GL	17	+	5,75		INTERWIEDI	AIL O	30	-			9.625	
												JRVE	Y\$										
мD 2,789	INCL. 18.40	246.90		SECTION 402	N+/S- -170	-366		94	MWD	2,97		16.70	+	247.10		VD 924	SECT	_	-19	$\overline{}$	E+ /W-	DLS 0.86	TOOL
2,883	_	247.60	+	431	-181	-393	_	$\overline{}$	MWD	3,07		16.40	-	244.20		013	48		-20		-443	0.94	MWD
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	1)	Engin	eering	& Su	pervisio	on	、 E	XAC	l Eng	gıne	erır	ıg, Inc	•		١	(9	18) 59	9-9400		
Operate	or: V	/olverine	G&O Co	of Uta	h, LLC		DA	ILY D	RIL	LIN	G F	REPO	RT		24 hrs	3 - m	idnigh	t to mic	Inight	
DATE		WELL				CONTRAC						TY, STATE	SPUD DATE		API#			SUPERVIS		
06/10 DAYS F/ SF		PRESENT	KMR		ONIGHT		Unit	Rig #1		OGRESS	Sev	ier, UT	6/1/05 NG TIME	43-0- ROP	41-30		O	LAUT	G Urba	
10		THEOLIT		Drillin				2,427		424	ļ	l	0.50	20.7			 Vavajo		6840	
							-		М	UD DA	TΑ									
wt		VIS.	WL	_		H	SAND	SOLIDS		PV	YP	GELS	DEPTH	DATE/TIME		ORIDE		ALCIUM		SALT PPM
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1 17.5 2 12.2	_	-	rpvc ip45lt	417 PDC	mr549 20160		16	28 28		37   2	2003	1866 424	117.50 20.50	15.9 20.7		Y	45/130	45	3 3	-1/16
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							HY	DRAULI	cs							Ī		SLOW	/ PUMP	) <u>-</u>
PUMP	MANUFA	CTURER	LINER	STROKE	1	SPM	GPM	AV DP	AV DC	PUMF	- 1	MTR DIFF PRESS.	НН	P/IN <sup>2</sup>	ECI	)		67 spm	76 spm	100 spr
NO. 1	Nati	onal	6"	LENGTH 8.5	2.96	125		<del>                                     </del>	<u> </u>	PRES	3,	rness.	<b> </b>			╢	<u></u> 1	130	<u> </u>	<del>                                     </del>
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Both						250	370	133	155	1600	)	250								
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12 1/4 E Dir. Ass			115	.50	12.250	ļ		Arapiea  Fwin Cre	<del> </del>							_	Cell No			1 345-667
5 - 6 5/8		,	149		7.625	5.	250	Navajo			$\top$					╌		OP Test		6/9
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4-5" HV	<b>/</b>		119		6.625	3.	250	GAS UNITS	3	FROM	<del>-</del>	TO		ROP (FT	/HR)			OP Drill		6/10
хо			2	.91		<u> </u>					+							perate F perate E		
Total E	SHΔ·		998	65					-									perate A		
STRING V		HA WT.	PU WT		SO WT.	ROT. TOP	——II—	RD. ELEVAT	ION C	L TO KB	<b>-</b>	KB ELEV		INTERMEDIA	ATE CSO	3	LAST	CASING	NEXT	CASING
110		48	115		105	200		5,736		17		5,75	3			!	3.375"	@ 2003	9,625	@ 5950
MD	INCL.	AZIMUTH	TVD	SECTION	N+/S-	E+ / W-	DLS	TOOL	S MD	URVE	-	AZIMUTH	Т	VD	SECTI	ON	N+ / S-	E+/W-	DLS	TOOL
2,222		242.10	2199	245	-103	-224	0.99	MWD	2,411	+		243.00	23	382	294	4	-125	-267	0.42	MWD
2,316	15.20	243.00	2290	269	-114	-245	1.02	MWD	2,505	15.6	0	245.00	24	472	320	0	-136	-290	0.51	MWD
									DAIL	Y AC	TIVIT	<u> </u>								
0:00	1:00	1.00		24 HOUF	ating he	ad														
1:00	2:00	1.00			t collar (		, drill c	ement	and she	oe .										
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2:30	15:30	13.00			2015 to															
15:30	16:00	0,50			ce greas		n and	blocks												
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20.00	0,00	0.00		5.11												_				
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	.,		Engi	neering	g & Su	pervisi	on i	 ز	EX	AC.	ΤEr	ngir	neer	ing, Inc	<b>.</b>				918) 59	9-94	00	1	
Ope	rator	: V	Volverin	e G&O C	o of Utal	h, LLC		D						REPO			24 hr		midnig			aht	
DATE			WELL	**			CONT	RACTOR						UNTY, STATE	SPUD DATE	<u> </u>	AP#				RVISOR	, <u>.</u>	
	6/09/0				R 17-7				Jnit Rig					evier, UT	6/1/05	43-0	41-3	3004	40	İ	G	Jrba	ın
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<u> </u>	WT	_	VIS.	1 140		5 <sub>1</sub>							DATA			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							******
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			J-T			132   8	7.0	0.5	J	6.50		5	16	8/14	2003	6/8 8am	6	5,00	0	2250		<u></u>	
BIT	SIZE	Ιм	FG.	TYPE	IADC	SERIAL	NO. I		IETS (1/32n	d"\		BIT D	OUT	I FOOTAGE	I HOURS	ROP		1000	Г <del></del>				
NO.		_			CODE				or TFA				007	TOOTAGE	HOURS	ROP		MTR	RPM RT+MTR	wo	B F	B B	ONDITION G
1	17.500	) s	tc	хрус	417	mr54	51	28	28	28/	22	137	2003	1866	117.50	15.9		Υ	45/130	45	5 3	3	-1/16
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PUN		ANUFA	CTURER	LINER	STROKE	GAL / STK	SPM	G	PM AV	DP	AV DC	PU	MP	MTR DIFF	нн	P / IN <sup>2</sup>	EC	D					100 spm
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хо					2.91								+			<u> </u>			Last O	perat	e Pipe	Rar	
T-4	I DI IA	·		000	05						+								Last O	perate	e Blind	Rai	
	IBHA		IA WT.	998 PUWT		SO WT.	ROT. TO	RQUE	GRD. ELI	EVATIO	N C	SL TO K	В	KB ELEVA	TION	INTERMEDIA	TE CS	3	Last O	perate			ASING
									5,7	36	$\top$	17		5,75				-1	3.375"		_		
												URV	FYS							<u></u>	<b>V G O</b> · C		9 0000
MD	INC	CL.	AZIMUTH	TVD	SECTION	N+/S-	E+/W	Dt	s to	OL	MD	INC		AZIMUTH	יז	/D	SECTI	ON	N+/S-	E+/V	V- DI	.s	TOOL
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FROM	<del></del>				24 HOURS																		
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4:00	10:	:00	6.00			ameron																	
10:0	)   12:	:00	2.00											and tighten									
																p in area i					nd ha	nd fo	or tap.
12:0		$\overline{}$	1.50						/es , da	rt va	lve a	l test	ted to	low side 2	00psi 5 m	in. High sic	de 50	000	psi 10	min.			
13:3	-		3.50			p to fix																	
17:0	) 20:	:00	3.00											e, Choke m									
	<del> </del>	_						osi 5	min & 2	2500	psi 10	) min	. BOF	E test witr	nessed by	Mark Jone	es &	Bar	t Kettle	Sta	te of l	Jtah.	
20:0		:00	1.00			r bushi																	
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	İ		j	6AN	/ DRIL	LING @	209	7'								-							

		Ei	ngin	eering	& St	upervisi	on		EX	ACT	En	gin	eeri	ng, Inc				(9	18) 59	9-9400	0		
Ope	rator:	Wolv	erine/	G&O C	o of Ut	ah, LLC		D	AIL'	Y DE	RIL	LIN	IG F	REPOI	RT		24 hrs	- n	nidnigh	t to mi	idn	ight	
DATE		WEL	L				CON	FRACTOR	₹				COUN	₹TY, STATE	SPUD DATE		AP#			SUPERV			
	6/08/05				17-7				Jnit Riç					ier, UT	6/1/05		41-30		-			Urb	
DAYS	F/ SPUD	PR			_	MIDNIGHT for MB	2	10	TAL DEPTH		PR	OGRES	S	DRILLI	NG TIME	ROP			MATION	- 1		DEPT	
	0		v	vait Oii	paris	IOI IVID			2,0	03				L		#VALU	=!		Navajo	<u> </u>		6840	md
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BIT	SIZE	MFG.	1 7	TYPE	IADC	SERIAL	NO.		JETS (1/32)	nd")		IN I	OUT	FOOTAGE	HOURS	ROP	I s	/TR	RPM	WOB	_	DUILL	CONDITION
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PUN		NUFACTUE	RER	LINER	ŀ	E GAL / STI	( SP	VI G	PM A	V DP	AV DC	PUM	- 1	MTR DIFF	нн	P / IN²	ECD			67 spm	ŋ 7	6 spn	100 spm
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415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E. Registered Professional Engineer stevehash@exactengineering.com

## GONFIDENTIAL PLEASE

June 26, 2005

Mr. Dustin Doucet Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, UT 84114-5801

Re:

Wolverine Kings Meadow Ranches 17-7 well

Sec 17 T23S R01W Sevier Co., UT API# 43-041-30040

Dear Mr. Doucet.

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed daily drilling reports for the subject well from June 18, 2005 through June 25, 2005. 7-inch production casing was set @ 6810 and the rig released on June 24, 2005. We are presently moving the drilling rig to well pad B-1 approximately 1/2 mi due south of the present location and expect a rig to begin completion operations about July 19, 2005. We respectfully request that the enclosed information remain confidential.

Consulting Engineer for Wolverine Gas and Oil Company of Utah, LLC

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Helene Bardolph

**EXACT Engineering, Inc.** 

well file

RECEIVED JUL 0 8 2005

DIV. OF OIL, GAS & MINING

Petroleum Engineering Consulting, Personnel & Jobsite Supervision complete well design, construction & management, drilling, completion, production, pipelines, appraisals, due diligence, acquisitions, procedures, temporary personnel and field supervision

			Engin	eering	& Sup	ervis	ion	í	Ţ	XΑ	CT E	Engi	nee	rin	g, Inc.	•			) (9	)18) <b>5</b> 9	99-940	9		
Oper	ator:	W	lolverin	680 C	o of Uta	h, LLC	:	7	JÁ	ILY	DR	RILL	.INC	3 F	REPO	RT	· · · · · · · · · · · · · · · · · · ·	24 1	) 115 - 1	nidnig	ht to mi	dnigi	nt	
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		Engir	neering	& Su	pervisio	n							g, Inc.			ĺ	(918)	599	-9400		
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lars			32	.15	6.313	2	.750										Las	t Sa	fety Me	eting	6/17
1-5" H	w		119	.76	6.625	3	.250	GAS	UNITS		FROM		SHOWS TO		ROPYFI	HR)	Las	t BO	P Drill		6/16
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	,	Engi	neering	& Sup	pervisio	on							g, Inc.				(9	18)	599-	9400	)	
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DATE		WELL				CONTRA	ACTOR			·;-	1	COUN	TY, STATE	SPUD DATE	I	AP#				UPERVI		**
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														<del></del>					0	ZUÜ,	<b>5</b>	
Daily To	otal	24.00	<u> </u>												עוט.	0F	OIL	Α.	40	, .		
										cos	T DAT	A,						<i></i>	عهر	(MI	VING	

#### **STATE OF UTAH**

DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING

ز										
				5-			7	50		•
	(h	ighlig	ht c	har	PORT				RM	8
	5.	LEASE	DES	IGN.	ATION A	ND	SER	IAL NUMB	ER:	
	-	UTL			ZB TTEE C	D T	DIDE	NAME		
	0.	IF INDI	A14, /	4LLC	) I I E C	<i>,</i> ,	NIDE	, INCANIL		
	7.				REEMEN					_
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Secretaria de la constante de	8.						an	ches 1	7-7	
	9.	API NU	MBE	R:						_
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0	10	CO			DL, OR \	WILL	)ÇA I			
	11.	QTR/0	QTR,	SEC	CTION, 1	row	NSH	IIP, RANGI	Ε,	
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	12.	COUN	VTV				13.	STATE	LIT A	_
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DUC	E 🗸	17.			ONS (DE			rt, GL): 3/5736	ì	
OW N	ANY? *	21.		TH B	RIDGE	N	ID :			
			1 6			Т	VD			
	.NC	· 🔽	,	/ES		(Sı	ubmit	t analysis)		
				ES.		•		t report)		
	NÇ	р	١	/ES	<b>√</b>	(Si	ubmit	t copy)		
& S		JRRY ME (BB	L)	CE	MENT	гор	**	AMOUNT	PULL	.ED
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AL			- 47		7					
KC	l									

B. TYPE OF WORKE   SEPT   S																
1a. TYPE OF WELL:		OIL WEI	L <b>Z</b>	V	SAS C	]	DRY	]	отн	ER	o. 0480 I . (0384					
NEW F-7	HORIZ.	DEE	:P- []	<u> </u>	RE	1	DIFF.			NHL	JENT,	IAL	8. W	ELL NAME	and NUMBER:	
WELL V	LATS.	EN		E	NTRY L	<u> </u>	RESVR.	<u> </u>	OTH	ER			· I			
		Comp	oany (	of Uta	h, LLC									130413	30040	
		CIT	√ Gra	nd Ra	enide	STATE	· MI	715 <b>49</b> 5	503			150				CAT
			, Giu	110 110	A DIGO	-		201: 1-0-0		,,,,,	-,		11. 9	OTR/QTR,	SECTION, TOWN	SHIP, RANGE,
AT SURFACE:	1680' FNL	<b>&amp;</b> 22	NOOP SACKET LAND O	C0000000000000000000000000000000000000	00000000				64 Q 198000	XXXXXXXXX	<u>-224-2888282</u> 87-11		(3.55635)	20000000000000	10.1997 (200000000)	44-44 0000000 C00000000 5
AT TOP PRODU	CING INTERVAL	. REPORT	ED BEL	ow: 1	082' F	NL &	2255'	FNL,	Sec 17	7 T23S I	701W		L			
AT TOTAL DEPT	∺։ <b>(</b> 113՝ FV	NL & 2	2254'	FNL,	Sec 17	7 T23	S R01	W								
				IED:	1.0000000000000000000000000000000000000	contrational (CV)	AF 000000000000	Α	ABANDON	ED 🔲	READY TO P	RODUC	E 🗾			
18. TOTAL DEPTH:				). PLUG	10(7000000000	00/2007/00/27	200000000000000000000000000000000000000		20. IF N	MULTIPLE CO	OMPLETIONS	, HOW N	IANY?*			
			S 57 1 1 1											PLU		D
					_								ומע	7 .	Te [] (Sub	mit analysis)
Spectral Dej	nsity/DSN/	/GR-M	ID&T	VD,"H	RI-MD	&TVI	D, Dipr	neter							=	
Monitor 2	1UD L	0 C-								1		?			=	
24. CASING AND LI	INER RECORD (	Report al	l strings	set in we	ell)											
HOLE SIZE	SIZE/GRADE	E V	VEIGHT (	(#/ft.)	TOP (I	MD)	вотто	M (MD)							CEMENT TOP *	* AMOUNT PULLE
30	20				O		12	23			Class G	600	12	22	Surface C I	R
17.5	133/8 J	55	61		0		2,0	003			HiFill V	1,141	52	23	Surface C I	R
12.25	9 5/8 🥎		47		0		5,9	941			50/50	230	5	9		
8.5	7 \ /		23		0		6,8	310			50/50	240	6	1	4700 CAL	. <u>                                     </u>
	<u> ۷</u>	HC T	PIIO	LTC			<u> </u>		<u> </u>							
25. TUBING RECO	RD				· .	-										
			PACKE	R SET (N	MD)	SIZE	<u> </u>	DEPTH	SET (MD)	) PACKE	R SET (MD)		SIZE	DI	EPTH SET (MD)	PACKER SET (MD
	<del>,  </del>	Ю								07 05050	DATION DEG					
		TOP /	MD)	BOTTO	M (MD)	TOP	(TVD)	BOTTO	M ČTVDŠ				SIZE	NO. HOL	ES PERFO	RATION STATUS
<del></del>	NAME															Squeezed
(B)		0,11		0,0	-			"	, <u>,,,</u>	STATE OF THE PROPERTY OF THE PA	NO. COL. 1785 T.C. 1897 W.	000000000				
(C)										THE RESERVE AND ADDRESS OF THE PARTY OF THE		*******		40	Open 🗸	Squeezed
(D)	-				-					100777000000000000000000000000000000000		Colones Ann		8	Open 🗸	Squeezed
	RE, TREATMEN	T, CEMEN	NT SQUE	EZE, ET	C.					63 43					0000	
									AM					1.5/		
6258-6352			7 1/2	% N	eFeHC	l w/a	dditive	s, 650	0 gal t	otal plus	s 1176 g	al KC				
													<del> </del>		lao WE	LI STATUS.
29. ENCLOSED AT	TACHMENTS:														30. WE	LL STATUS:
Z ELECT	RICAL/MECHAN	IICAL LOC	3S				Z	GEOLOG	IC REPOR	хт 🔲	DST REPOR	т 🔽	DIREC	TIONAL S	URVEY	
SUND	RY NOTICE FOR	R PLUGGII	NG AND	CEMENT	VERIFICA	TION		CORE AN	IALYSIS		OTHER:		-			
											3ECF	.11/1				

(CONTINUED ON BACK)

AUG 3 1 2005

CONFIDENTIAL

INTERVAL A (As shown in item #26) 31. INITIAL PRODUCTION GAS - MCF: WATER - BBL: TEST PRODUCTION OIL - BBL: DATE FIRST PRODUCED: TEST DATE: HOURS TESTED: RATES: 274 0 0 8/24/2005 120 8/24/2005 24 HR PRODUCTION OiL - BBL: GAS - MCF: WATER - BBL: CSG\_PRESS API GRAVITY BTU - GAS GAS/OIL RATIO CHOKE SIZE: TBG. PRESS. RATES: 40.00 274 0 0 Open 0 O INTERVAL B (As shown in item #26) WATER - BBL: GAS - MCF: TEST PRODUCTION OIL - BBL: DATE FIRST PRODUCED: TEST DATE: HOURS TESTED: RATES: GAS -- MCF: WATER - BBL: API GRAVITY GAS/OIL RATIO 24 HR PRODUCTION OIL - BBL: BTU - GAS CHOKE SIZE: TBG. PRESS. CSG. PRESS. RATES: INTERVAL C (As shown in item #26) GAS - MCF: WATER - BBL: DATE FIRST PRODUCED: TEST DATE: HOURS TESTED: TEST PRODUCTION OIL - BBL: RATES:

INTERVAL D (As shown in item #26)

BTU - GAS

				INTE	KVAL D (AS SIIO	WII III IL <del>e</del> III #20)				
DATE FIRST PR	ODUCED:	TEST DATE:		HOURS TESTED	-	TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG, PRESS.	API GRAVITY	BTU – GAS		24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

RATES:

24 HR PRODUCTION OIL - BBL:

GAS/OIL RATIO

32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)

CSG, PRESS.

33. SUMMARY OF POROUS ZONES (Include Aquifers):

TBG. PRESS.

CHOKE SIZE:

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

API GRAVITY

34.	FORMATION	(Log)	MARKERS:

GAS - MCF:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
Navajo	6,128	6,810	Oil & water	Arapien Twin Creek Navaio	0 5.828 6.128
		i		;	6.

35. ADDITIONAL REMARKS (Include plugging procedure)

36. I	hereby certify that the	foregoing and attach	ed information is complete	and correct as determ	nined from all available records	\$.
-------	-------------------------	----------------------	----------------------------	-----------------------	----------------------------------	-----

NAME (PLEASE PRINT) JOHN Frona

TITLE Manager of Geology

SIGNATURE Jah & Orre

DATE 8/29/2005

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

\* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

\*\* ITEM 24: Cement Top - Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to:

Utah Division of Oil, Gas and Mining 1594 West North Temple, Suite 1210

Box 145801

Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

CONFIDENTIAL

PROD. METHOD:

Flowing

INTERVAL STATUS:

PROD. METHOD:

INTERVAL STATUS:

PROD. METHOD:

INTERVAL STATUS:

WATER - BBL:

Producing



## WOLVERINE GAS AND OIL COMPANY

of Utah, LLC

Energy Exploration in Partnership with the Environment

August 29, 2005

CONFIDENTIAL

Ms. Diana Whitney Utah Division of Oil, Gas & Mining 1594 W. N. Temple, Suite 1210 Salt Lake City, UT 84114-5801

Re:

Kings Meadow Ranches 17-7 Well

Completion Report

Dear Al:

Enclosed please find the Completion Report (form #8) for the captioned well. Attached to the report are the following documents:

- Directional Survey
- Geologic Report

Hem Bardelye

- Logs
- -Mudlog
- -Electric Micro Imager Monitor Log
- -HRI MD
- -HRI TVD
- -Spectral Density/DSN/GR MD
- -Spectral Density/DSN/GR TVD

Please keep this report and all attachments confidential. If you have any questions or concerns, please feel free to contact me.

Sincerely.

Helene Bardolph

enclosures

RECEIVED

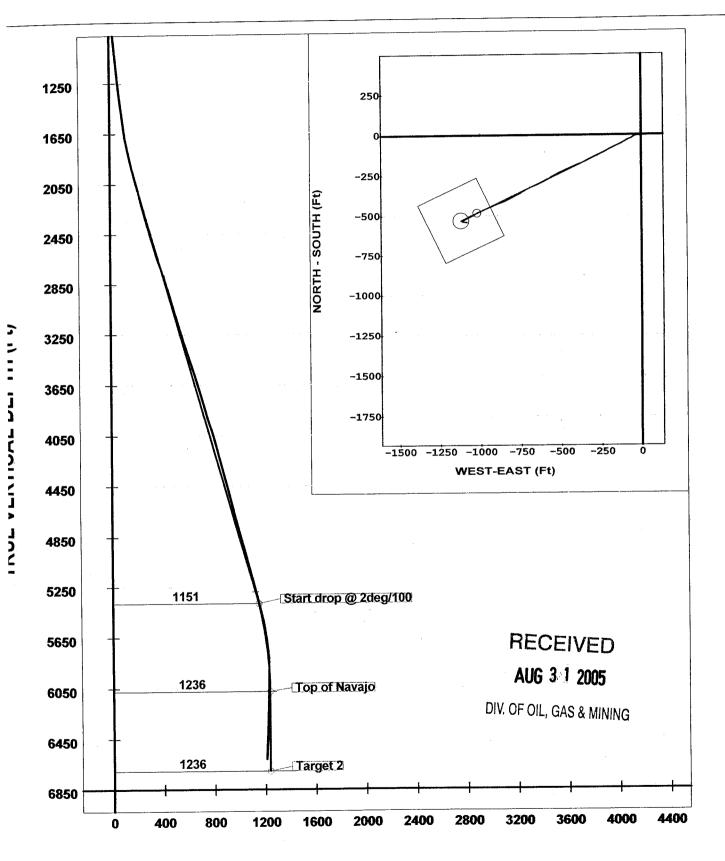
AUG 3 1 2005

DIV. OF OIL, GAS & MINING

Company: Wolverine Oil & Gas Co of Stah, LLC ease/Well: KMR 17-7

\_ease/Well: KMR 17-7 \_ocation: Covenant Field State/Country: Sevier Co. Ut.





 **W** 

Job Number: WYL0505D067

State/Country: Sevier Co. Ut.

Company: Wolverine Oil & Gas Co of Utah, LLDeclination: 12.56

Lease/Well: KMR 17-7

**Location: Covenant Field** 

O. Ju.

File name: C:\MARSHA~1\ENDOFW~1\WOLVER~1\FE948F~1\\$7-

Rig Name: Unit 111

Date/Time: 12-Jul-05 / 14:22 Curve Name: 17-7 Work

RKB:

G.L. or M.S.L.:

#### **WINSERVE SURVEY CALCULATIONS**

Minimum Curvature Method Vertical Section Plane 240.36 Vertical Section Referenced to Wellhead Rectangular Coordinates Referenced to Wellhead

Measu Depa FT	th	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Course Length FT	Vertical Section FT		E-W FT	Dogleg Severity Deg/100	BUILD RATE Deg/100	WALK RATE Deg/100	TFO Deg	
_	_												
.0		.00	.00	.00		.00	.00	.00	.00	.00	.00	90.00	
160.0		.30	178.30	160.00	160.00	.20	42	.01	.19	.19	111.44	-113.49	
255.0		.50	98.20	255.00	95.00	01	73	.43	.57	.21	-84.32	83.51	
345.0		.70	136.50	344.99	90.00	46	-1.18	1.20	.49	.22	42.56	127.36	
436.0	0	.80	219.80	435.99	91.00	.01	-2.07	1.17	1.10	.11	91.54	37.36	
496.0	0	1.60	239.50	495.97	60.00	1.24	-2.82	.18	1.48	1.33	32.83	-16.31	
557.0	0	2.90	232.10	556.93	61.00	3.61	-4.20	-1.77	2.18	2.13	-12.13	94.62	
649.0	0	4.00	280.50	648.78	92.00	8.37	-5.04	-6.76	3.26	1.20	52.61	-26.47	
741.0	0	6.00	271.30	740.42	92.00	14.95	-4.35	-14.72	2.34	2.17	-10.00	-31.43	
835.0	0	6.70	267.70	833.85	94.00	24.03	-4.46	-25.11	.86	.74	-3.83	-104.29	
925.0	0	6.50	256.20	923.25	90.00	33.60	-5.89	-35.31	1.48	22	-12.78	-133.55	
1017.0		5.40		1014.76	92.00	42.94	-9.17	-44.18	2.00	-1.20		-105.68	
1112.0		5.20		1109.36	95.00	51.60	-14.18	-51.30	1.41	21	-15.16	77.14	
1207.0	0	5.40	234.80	1203.95	95.00	60.25	-19.67	-58.13	.74	.21	7.68	83.57	
1309.0	0	6.20	258.50	1305.45	102.00	70.26	-23.53	-67.45	2.45	.78	23.24	-57.66	
1404.0	ın	7.50	245.10	1399.77	95.00	81.32	-27.16	-78.10	2.16	1.37	-14.11	-55.26	
1498.0		7.90		1492.92	94.00	93.89	-32.87	-89.32	.71	.43		-162.16	
1592.0		6.90		1586.14	94.00	105.99	-38.95	-99.79	1.13	-1.06	-2.87	-2.48	
1687.0		9.60		1680.15	95.00	119.61	-46.18	-111.34	2.84	2.84	74	27.11	
1781.0	0	12.40		1772.42	94.00	137.52	-54.76	-127.06	3.25	2.98	6.91	24.45	
1844.0	0	13.60	246.50	1833.80	63.00	151.63	-60.66	-139.94	2.07	1.90	3.65	-53.66	
2033.0		14.60		2017.11	189.00	197.54	-80.92	-181.24	.84	.53	-2.70	35.21	
2128.0		15.20		2108.92	95.00	221.95	-92.31	-202.85	.77	.63		-166.15	
2222.0		14.30		2199.82	94.00	245.87	-103.33	-224.09	.99	96	96	20.82	
2316.0		15.20		2290.72	94.00	269.78	-114.28	-245.37	1.02	.96	1.38	3.85	
	-									.00		5.00	

Ť								$\overline{}$			TEO	
Managurod	Incl	Drift	True	Course	Vertical			Dogleg	BUILD	WALK	TFO	
Measured		Direction		Length	Section	N-S	E-W	Severity	RATE	RATE	_	
Depth	Angle	Direction	Depth	FT	FT	FT	FT	Deg/100	Deg/100	Deg/100	Deg	
FT	Deg	Deg	Debai					40	40	.11	90.87	
2411.00	15.60	243.50	2382.31	95.00	294.97	-125.56	-267.93	.42	.42			
2505.00	15.60		2472.85	94.00	320.18	-136.48	-290.73	.51	.00	1.91	17.66	
	16.40		2564.17	95.00	346.25	-147.23	-314.60	.88	.84	.95	-14.46	
2600.00			2654.03	94.00	373.69	-158.60	-339.71	1.42	1.38	-1.17	39.40	
2694.00	17.70				402.98	-170.57	-366.60	.94	.74	1.89	1 <b>66</b> .85	
2789.00	18.40	246.90	2744.36	95.00	402.90	-170.57	-000.00		•••			
	47 E0	247.60	2833.78	94.00	431.74	-181.77	-393.31	.98	~. <b>96</b>		-169.83	
2883.00	17.50		2924.58	95.00	459.47	-192.53	-419.09	.86	84	53	-111.35	
2978.00	16.70				485.84	-203.44	-443.22	.94	32	-3.12	39.41	
3071.00	16.40	244.20	3013.73	93.00		-214.98	-467.87	.67	.53		-133.58	
3166.00	16.90	245.60	3104.75	95.00	512.97			.61	42	-1.56	-65.61	
3262.00	16.50	244.10	3196.70	96.00	540.47	-226.70	-492.84	.01	42	-1.00	00.01	
<b>4.</b>												
			0000 70	04.00	567.37	-238.93	-516.83	.74	.32	-2.34	-1.07	
3356.00	16.80	241.90	3286.76	94.00			-542.23	1.79	1.79	11	-79.64	
3451.00	18.50	241.80	3377.28	95.00	596.16	-252.52			.11	-1.68	143.35	
3546.00	18.60	240.20	3467.35	95.00	626.38	-267.17	-568.66	.55		2.66	162.34	
3640.00	17.60	242.70	3556.70	94.00	655.57	-281.14	-594.30	1.35	-1.06			
3734.00	16.70	243.70	3646.52	94.00	683.26	-293.64	-619.04	1.01	96	1.06	133.81	
3734.00	10.70	240.70	00.0.0_	•								
							0.40.04	-7-7	- 52	2.00	150.29	
3829.00	16.20	245.60	3737.63	95.00	710.08	-305.17	-643.34	.77	53			
3923.00	15.20	247.80	3828.12	94.00	735.36	-315.24	-666.69	1.24	-1.06	2.34	-5.86	
4018.00	17.90	246.90	3919.18	95.00	762.22	-325.67	-691.66	2.85	2.84	95	-113.69	
	17.10	239.70	4007.88	93.00	790.09	-338.18	-716.61	2.48	86	-7.74	-160.74	
4111.00			4007.00	95.00	817.14	-352.11	-739.81	1.23	-1.16	-1.47	176.91	
4206.00	16.00	238.30	4090.94	90.00	017.14	-502.11	, 00.0 ,					
4300.00	14.60	238.60	4189.61	94.00	841.93	-365.09	-760.95	1.49	-1.49	.32	103.00	
		242.70	4281.59	95.00	865.70	-376.75	-781.66	1.10	21	4.32	3.57	
4395.00	14.40			94.00	890.09	-387.88	-803.38	1.39	1.38	.32	-172.38	
4489.00	15.70	243.00				-399.21	-825.30	1.38	-1.37	74	118.49	
4584.00	14.40	242.30	4464.10	95.00	914.73				53	4.36	34.75	
4678.00	13.90	246.40	4555.25	94.00	937.64	-409.16	<b>-84</b> 5.99	1.19	55	4.50	54.70	
	45.00	040.00	4047 SE	95.00	961.14	-418.08	-867.95	1.39	1.16	3.05	65.14	
4773.00	15.00	249.30				-426.41	-890.97	.49	.21	1.70	-68.71	
4867.00	15.20	250.90		94.00	985.27		-914.54	1.57	.63	-5.37	158.32	
4962.00	15.80		4829.55	95.00	1010.39	-435.79			43	.64	148.58	
5056.00	15.40	246.40	4920.09	94.00	1035.54	<b>-446</b> .03	-937.65	.46				
5151.00	14.70		5011.83	95.00	1060.03	-455.57	-960.39	.87	74	1.79	-97.89	
0.07.00	•											
			_,		4000.00	40E 44	000 44	4.00	11	-3.94	161.20	
5245.00	14.60		5102.77	94.00	1083.66	-405.14	-982.14	1.00			-55.97	
5340.00	14.10		5194.81				-1003.44	.56	53	.74		
5434.00	14.50	242.80	5285.90		1130.31		-1024.29	.74	.43	-2.45	-85.02	
5529.00	14.70		5377.83	95.00	1154.23	-497.39	-1044.98	1.55	.21	-6.11	118.69	
5623.00	13.70		5468.97		1177.21		-1065.15	2.58	-1.06	9.57	-164.00	
JUZ3.00	13.70	۵۳۵.۵۵	U-100.07	5								
									0.04	4.00	470 50	
5718.00	11.00	241.90	5561.77		1197.47		-1083.43	2.99	-2.84		-179.50	
5812.00	6.90		5654.60	94.00	1212.09	-524.17	-1096.31	4.36	-4.36		-174.40	
5907.00	4.90		5749.10		1221.85		-1104.82	2.12	-2.11	-2.42	<b>-143</b> .43	
			5824.87		1227.62		-1109.51	1.78	-1.32	-15.66	-163.92	
5983.00	3.90				1230.38		-1111.10	4.50	-2.84		-51.35	
6078. <b>00</b>	1.20	127.50	5919.80	90.00	1230.30	-555.10	-, , , , , , 10	1.00				
6172.00	1.90	105 70	6013.76	9 <u>4</u> 00	1228.90	-536.18	-1108.82	.96	.74	-23.19	<b>-92</b> .70	
6172.00					1226.59		-1105.76		.00	-5.68	-30.90	
6267.00	1.90		6108.71		1223.83		-1102.34		.43	-6.17	24.41	
6361.00	2.30		6202.65						.42	4.00	93.35	
6456.00	2.70		6297.56		1220.49		-1098.23		.00	7.13	<b>-45</b> .96	
6550.00	2.70	105.00	6391.45	94.00	1217.17	-538.68	-1093.90	.34	.00	1.13	<del>-,</del> J.30	

Measured Depth FT	Incl Angle Deg	Drift Directior Deg	True Vertical Depth	Course Length FT			E-W FT	Dogleg Severity Deg/100	BUILD RATE Deg/100	WALK RATE Deg/100	TFO Deg	
6645.00	3.10	97.80	6486.33	95.00	1213.53	-539.61	-1089.19	.57	.42	-7.58	3.79	
Projection	n to Bit											
6768.00	3.80	98.50	6609.11	123.00	1207.69	-540.66	-1081.87	.57	.57	.57	4.03	

# **WOLVERINE GAS & OIL CORPORATION**

# KINGS MEADOW RANCHES #17-7 SE/NW SEC.17.T23S, R1W SEVIER CO., UT

RECEIVED AUG 3:1 2005

DIV. OF OIL, GAS & MINING

#### **GEOLOGIC REPORT**

#### ON

#### KINGS MEADOW RANCHES #17-7 SE/NW SEC.17.T23S, R1W SEVIER CO., UT

#### **FOR**

#### WOLVERINE GAS & OIL CORPORATION ONE RIVER FRONT PLAZA 55 CAMPAU NW GRAND RAPIDS, MI 49503-2616

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**June 2005** 

Decollement Consulting, Inc Roger D. Charbonneau, B.Sc. Geologist

#### WELL DATA SUMMARY

**WELL NAME** 

**KINGS MEADOW RANCHES #17-7** 

**OPERATOR** 

**WOLVERINE GAS & OIL CORP** 

**SURFACE LOCATION** 

SE/NW SEC.17.T23S, R1W SEVIER COUNTY, UT

API#

043 - 041- 30040

WELL CLASSIFICATION

DEVELOPMENT COVENANT

**FIELD** 

**DRILLING CONTRACTOR** 

**UNIT #111** 

**ELEVATION - GROUND LEVEL** 

KELLY BUSHING

5736'

5753'

SPUD DATE

06-01-05

**SURFACE CASING** 

2005' OF 13 3/8"

INTERMEDIATE CASING

5955' OF 9 5/8"

PRODUCTION CASING

6810' OF 7"

**HOLE SIZE** 

17 1/2 ", 12 1/4", 8 1/2

SAMPLE INTERVAL

2000 - 6810

**GAS DETECTION** 

2000 - 6810

**OPEN HOLE LOGS** 

GR, CAL, SP, HRI, CNL-FDL, DIP METER, EMRL

**MUD TYPE** 

SATURATED SALT, FLOZAN

**WELL STATUS** 

AWAITING COMPLETION

#### **FORMATION TOPS**

**Kelly Bushing** 

5753'

Formation Prog.(tvd) Spl. Top (md) Spl. Top(tvd) Log Top(md) Log Top(tvd) Sub Sea

Arapien	Surface					
Twin Creek	5663	5840	5682	5840	5682	<b>71</b>
Navaio	6073	6133	5974	6128	5969	-216

#### FORMATION EVALUATION

#### WOLVERINE GAS & OIL CORPORATION KINGS MEADOW RANCHES #17-7 SE/NW SEC.17,T23S, R1W SEVIER COUNTY, UT

The Kings Meadow Ranch #17-7 was the eighth well drilled in the Covenant Field. Decollement Consulting began sample coverage at 2000' on Unit Rig #111, June 8, 2005. Crews collected 30' lagged samples to total depth (6810'). Surface casing was set at 2005' (13 3/8") and 12 ½" hole drilled to 5955'. Intermediate casing (9 5/8") was sat at 5945' and production casing (7") ran to total depth (6810'). A full suite of E-logs was run including Dip Meter and EMRL. Gas Detection was ran from 2005' to 6810'.

Navajo Sandstone 6128' MD log 5969' TVD Log -216 Sub Sea

The Navajo Sandstone was white, clear, quartzose, light red, very fine (lower) to medium (upper) grained, sub angular to rounded, fair to poor sorted friable, 70-98% unconsolidated, brown oil stain, strong hydrocarbon odor, rainbows on wash water, yellow white oil fluorescence, yellow while milky cut fluorescence, yellow gold residual ring cut, 10-14% intergranular porosity,

Conclusion: Oil saturated reservoir - Awaiting completion.

## **BIT RECORD**

WELL NAM	TE			KINGS M	EADOW RANCHES #17-7	
LOCATION				SE/NW SEC. 17, T23S, R1W		
SURFACE (	CASING			2005' OF	13 3/8"	
SPUD DATE	E			6-01-05		
TD DATE		• .		6-22-05		
BIT	1	2	3	4	5	
SIZE	17 ½	12 1/4	12 1/4	12 1/4	8 ½	
MAKE	STC	DPI	RTC	RTC	SEC	
TYPE	XRTVC	MP4SLT	HP43A	HP53A	X53OS	
SERIAL#	MR5456	2016094	B73541	PB4484	106649	
JETS	3X28	6X18	3X24	3X24	3X11	
OUT @	2003	3306	4646	5955	6810	
FOOTAGE	1585	1721	1340	1309	855	
HOURS	112 ½	63 1/2	<b>56</b> ½	69	26 1/2	
WT	45	40	40	45	35	
RPM	0/35	0/31	0/30	0/30	0/35	
PP	1960	2060	1850	1900	1400	
MUD WT	9.6	10.1	10.2	10.5	8.5	
VIS	39	33	34	33	34	

## DAILY DRILLING SUMMARY

DATE	DEPTH	PROG.	HRS	MUD	VIS	WL	PH	ACTIVITY
6-1-05	120	NIL	NIL	9.1	30	NC	10.5	RIG UP, SPUD
6-2-05	661	461	21	9.5	30	NC	10.0	DRILL
6-3-05	1063	402	23 ½	9.7	32	NC	9.5	DRILL
6-4-05	1361	293	23	9.7	33	NC	10.5	DRILL, POOH, MWD
6-5-05	1585	224	16	9.5	33	NC	10.0	RIH, DRILL
6-6-05	1809	224	17 ½	9.7	35	NC	9.5	Drill, Trip MWD, Drill
6-7-05	2003	194	16	9.8	35	NC	9.0	DRILL, POOH, Run 13 3/8"
6-8-05	2003	NIL	NIL	9.6	34	NC	9.5	Cement, nipple up, Press test
6-9-05	2003	NIL	NIL	9.5	33	NC	10.0	Wait on parts, test B.O.P.
6-10-05	2294	291	<b>16</b> ½	9.2	33	NC	10.5	RIH, DRILL
6-11-05	2859	565	23	9.5	31	NC	10.5	DRILL
6-12-05	3300	441	23 1/2	9.7	30	NC	10.0	DRILL
6-13-05	3684	384	13 ½	9.8	30	NC	9.5	DRILL, Trip bit, DRILL
6-14-05	4030	346	$14\frac{1}{2}$	10.0	34	NC	9.0	DRILL, PUMP REPAIR
6-15-05	4502	472	22	10.1	34	NC	9.5	DRILL
6-16-05	4785	283	15	10.1	33	NC	10.5	DRILL, TRIP BIT
6-17-05	5302	517	23	10.3	34	NC	10.5	DRILL
6-18-05	5762	460	20 ½	10.4	35	NC	10.0	DRILL, Work on pump
6-19-05	5955	193	<b>12</b>	10.5	33	NC	10.5	DRILL, POOH, Run 9 5/8"
6-20-05	5961	6	1/2	<b>8.4</b>	30	9.0	9.0	PRESS TEST, DRILL
6-21-05	6718	757	$23\frac{1}{2}$	8.4	32	9.0	9.5	DRILL
6-22-05	6810	92	$2\frac{1}{2}$	8.5	34	8.5	9.0	DRILL, POOH LOGS
6-23-05	6810	NIL	NIL	8.5	34	9.0	9.0	LOGGING

## **DEVIATION SURVEYS**

DEPTH	INCLINATION	DIRECTION
160.00	.30	178.30
255.00	.50	98.20
345.00	.70	136.50
436.00	.80	219.80
496.00	1.60	239.5
557.00	2.90	232.10
649.00	4.00	280.50
741.00	6.00	271.30
835.00	6.70	267.70
925.00	6.50	256.20
1017.00	5.40	241.90
1112.00	5.20	227.50
1207.00	5.40	234.80
1309.00	6.20	258.50
1404.00	7.50	245.10
1498.00	7.90	241.10
1592.00	6.90	238.40
1687.00	9.60	237.70
1781.00	12.40	244.20
1844.00	13.60	246.50
2033.00	14.60	241.40
2033.00	14.60	241.40
2128.00	15.20	243.00
2222.00	14.30	242.10
2316.00	15.20	243.40
2411.00	15.60	243.50

DEPTH	INCLINATION	DIRECTION
2505.00	15.60	245.30
2600.00	16.40	246.20
2694.00	17.70	245.10
2789.00	18.40	246.90
2883.00	17.50	247.60
2978.00	16.70	247.10
3071.00	16.40	244.20
3071.00	16.40	244.20
3166.00	16.90	245.60
3262.00	16.50	244.10
3356.00	16.80	241.90
2451.00	18.50	241.80
2546.00	18.60	240.20
2640.00	17.60	242.70
3734.00	16.70	243.70
3829.00	16.20	245.60
3829.00	16.20	245.60
2923.00	15.20	247.80
4018.00	17.90	246.90
4111.00	17.10	239.70
4111.00	17.10	239.70
4206.00	16.00	238.30
4300.00	14.60	238.60
4395.00	14.40	242.70
4489.00	15.70	243.00
4584.00	14.40	242.30
4584.00	14.40	242.30
4678.00	13.90	246.40
4773.00	15.00	249.30
4867.00	15.20	250.90
4962.00	15.80	245.80

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DEPTH	INCLINATION	DIRECTION
4962.00	15.80	246.80
5056.00	15.40	246.40
5151.00	14.70	248.10
5245.00	14.60	244.40
5340.00	14.10	245.10
5434.00	14.50	242.80
5529.00	14.70	237.00
5623.00	13.70	246.00
5718.00	11.00	241.90
5812.00	6.90	241.60
5907.00	4.90	239.30
5907.00	4.90	239.30
5983.00	3.90	227.40
6078.00	1.20	127.50
6172.00	1.90	105.70
6267.00	1.90	100.30
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## SAMPLE DESCRIPTIONS

## Wolverine Gas & Oil Corporation Wolverine Federal #17-7 Kings Meadow Ranch

2000-30	LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, abundant white, soft, chalky.
2030-60	LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, abundant white, soft, chalky.
2060-90	LIMESTONE 100% White, soft, dolomitic, chalky, light gray, argillaceous, lithographic, mudstone.
2090-2120	SHALE 40% Red brown, silty, blocky, firm, blocky, slightly calcareous.
2090-2120	SILTSTONE 40% Light red brown, arenaceous, argillaceous, slightly calcareous.
	LIMESTONE 20% Light to medium gray, argillaceous, lithographic, mud stone.
2120-50	SHALE 10% Red brown, silty, blocky, firm, blocky, slightly calcareous.
	SILTSTONE 30% Light gray, white, chalky, anhydrite, blocky.
	LIMESTONE 60 % Light to medium gray, argillaceous, lithographic, mudstone.
2150-80	LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, silty in parts, chalky in part.
2180-2210	LIMESTONE 90% Light to medium gray, argillaceous, lithographic, mudstone, silty in parts, chalky in part. ANHYDRITE 10% White, soft to firm, chalky, silty.
2210-40	LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, silty in part, chalky in part, abundant anhydrite fracture in fill.
2240-70	SHALE 10% Red brown, blocky, dolomitic, firm to hard. LIMESTONE 90% Light to medium gray, argillaceous, lithographic, mudstone, abundant white sucrosic, anhydrite, fracture in fill.
2270-2300	LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, abundant white, sucrosic anhydrite, fracture in fill.
2300-30	LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone,
	abundant white, sucrosic, anhydrite fracture in fill.
2330-60	SILTSTONE 30% White, light gray, arenaceous, argillaceous, anhydritic, firm, tight. LIMESTONE 70% Light to medium gray, argillaceous, lithographic, mudstone.

SILTSTONE 40% White, light gray, arenaceous, argillaceous, anhydrite, firm, tight. 2360-90 LIMESTONE 60% Light to medium gray, argillaceous, lithographic, mudstone. SILTSTONE 30% White, light gray, arenaceous, argillaceous, anhydritic, firm, tight. 2390-2420 LIMESTONE 70% Light to medium gray, argillaceous, lithographic, mudstone. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, pyritic, 2420-50 chalky in parts, abundant anhydrite fracture in fill. SHALE 70% Red brown, blocky, firm to hard, dolomitic, silty. 2450-80 LIMESTONE 30% Light to medium gray, argillaceous, lithographic, mudstone, pyritic, chalky in part, abundant anhydrite fracture in fill. SHALE 10% Red brown, blocky, firm to hard, dolomitic, silty. 2480-2510 LIMESTONE 90% Light to medium gray, argillaceous, lithographic, mudstone, pyritic, chalky in part, abundant anhydrite fracture in fill. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, chalky 2510-40 in part, anhydrite fracture in fill. SHALE 10% Red brown, blocky, dolomitic, silty, firm, salt casts. 2540-70 LIMESTONE 90% Light to medium gray, argillaceous, lithographic, mudstone, chalky in part, anhydrite fracture in fill. LIMESTONE 100% Medium to dark gray, argillaceous, lithographic, mudstone, firm to 2570-2600 hard, crystalline in part. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, 2600-30 crystalline in part, 30% soft, chalky. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, dense, mudstone. 2630-60 LIMESTONE 100% Light to medium gray, medium to dark gray, argillaceous, 2660-90 lithographic, mudstone, 30% soft, chalky. LIMESTONE 40% Light to medium gray, medium to dark gray, argillaceous, lithographic, 2690-2720 mudstone, 30% soft, chalky. ANHYDRITE 60% White, crystalline, sucrosic texture in part, chalky texture in part, soft to firm. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, crystalline, dense in 2720-50

part, mudstone, 10% soft, chalky.

- 2750-80 LIMESTONE 100% Light to medium gray, argillaceous, lithographic, crystalline, dense in part, mudstone, 10% soft, chalky, abundant white, chalky, anhydrite fracture in fill.
- 2780-2810 LIMESTONE 60% Light to medium gray, argillaceous, lithographic, crystalline, dense in part, mudstone, 10% soft, chalky, light to medium gray brown.

  SILTSTONE 40% White, light gray, arenaceous, argillaceous, limy, firm.
- 2810-40 LIMESTONE 100% Light to medium gray, argillaceous, lithographic, crystalline, dense in part, mudstone, 10% soft, chalky, light to medium gray brown.
- 2840-70 LIMESTONE 50% Light to medium gray, argillaceous, lithographic, mudstone, pyritic. SILTSTONE 10% Light gray, arenaceous argillaceous, limy. ANHYDRITE 40% White, sucrosic, crystalline, chalky.
- 2870-2900 SHALE 10% Red brown, dark red, blocky, dolomitic, silty.

  LIMESTONE 50% Light to medium gray, argillaceous, lithographic, mudstone, pyritic.

  SILTSTONE 10% Light gray, arenaceous argillaceous, limy.

  ANHYDRITE 30% White, sucrosic, crystalline, chalky.
- 2900-30 LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, crystalline, dense in part.
- 2930-60 SHALE 20% Red brown, red orange, floating quartz grains, soft to firm, blocky, firm, dolomitic.

  SILTSTONE 10% Red brown, arenaceous, argillaceous, dolomitic, firm.

  SANDSTONE 50% White, clear, red orange, fine to medium grained, sub angular to rounded, fair to well sorted, unconsolidated.

  LIMESTONE 20% Light to medium gray, argillaceous, lithographic, mudstone.
- 2960-90 SHALE 20% Red brown, red orange, floating quarts grains, soft to firm, blocky, firm, dolomitic.

  SANDSTONE 50% White, clear, red orange, fine to medium grained, sub angular to rounded, fair to well sorted, unconsolidated.

  LIMESTONE 30% Light to medium gray, argillaceous, lithographic, mudstone.
- 2990-3020 SHALE 40% Red brown, gray, blocky, firm, dolomitic, silty, sandy.
  SILTSTONE 50% Light red orange, red brown, arenaceous, argillaceous, dolomitic.
  LIMESTONE 10% Light to medium gray, argillaceous, lithographic, mudstone.
- 3020-50 SHALE 20% Red brown, gray, blocky, firm, dolomitic, silty, sandy.
  SILTSTONE 10% Light red orange, red brown, arenaceous, argillaceous, dolomitic.
  SANDSTONE 70% White, clear, quartzose, light red, fine to medium grained, sub angular to rounded, fair to poorly sorted.

LIMESTONE 100% Light to medium gray, white, argillaceous, lithographic, chalky, 3050-80 mudstone, abundant anhydrite fracture in fill. LIMESTONE 100% Light to medium gray, white, argillaceous, lithographic, chalky, 3080-3110 mudstone, abundant anhydrite fracture in fill. 3110-40 SHALE 10% Red brown, blocky, dolomitic, firm. LIMESTONE 90% Light to medium gray, lithographic, mudstone. LIMESTONE 100% Light to medium gray, white, argillaceous, lithographic, mudstone, 3140-70 20% soft, chalky. LIMESTONE 70% Light to medium gray, white, argillaceous, lithographic, mudstone, 3170-3200 20% soft, chalky. SILTSTONE 30% Red brown, arenaceous, dolomitic, blocky, firm to hard. LIMESTONE 90% Light to medium gray, white, argillaceous, lithographic, mudstone, 3200-30 20% soft, chalky, tan, crystalline. SILTSTONE 10% Red brown, arenaceous, dolomitic, blocky, firm to hard. SHALE 10% Red brown, blocky, dolomitic, firm to hard. 3230-60 LIMESTONE 90% Light to medium gray, argillaceous, lithographic, mudstone. LIMESTONE 100% Light to medium gray brown, tan, crystalline, dense, lithographic, 3260-90 mudstone. 3290-3320 LIMESTONE 100% Light to medium gray brown, tan, crystalline, dense, lithographic, mudstone, abundant white, soft, chalky, abundant white, crystalline, anhydrite in fill. LIMESTONE 100% Light to medium gray brown, tan, crystalline, dense, lithographic, 3320-50 mudstone, abundant white, soft, chalky, abundant white, crystalline, anhydrite in fill. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, 10% 3350-80 soft, chalk, abundant anhydrite fracture fill, crystalline in part, firm to hard. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, 10% 3380-3410 soft, chalk, anhydrite fracture in fill. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, 10% 3410-40 soft, chalky. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, 20% 3440-70 soft, chalky.

LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, 30% 3470-3500 soft, chalky. LIMESTONE 100% Light to medium gray, light to medium gray brown, crystalline, 3500-30 argillaceous, earthy, lithographic, mudstone, 10% white, light gray, soft, chalky. LIMESTONE 100% Light to medium gray, light to medium gray brown, tan, 3530-60 microcrystalline, dense, hard tight, lithographic, mudstone. LIMESTONE 70% Light to medium gray, light to medium gray brown, tan, 3560-90 microcrystalline, dense, hard, tight, lithographic, mudstone. SILTSTONE 30% Light gray, white, arenaceous, soft and chalky in part, limy. LIMESTONE 100% Light to medium gray, light to medium gray brown, tan, 3590-3620 microcrystalline, dense, hard, tight, mudstone. LIMESTONE 100% Light to medium gray, light to medium gray brown, crystalline, 3620-50 dense, hard, tight, lithographic, mudstone, 10% white, soft, chalky, abundant white, crystalline anhydrite. LIMESTONE 80% Light to medium gray, light to medium gray brown, tan, 3650-80 microcrystalline, dense, hard, tight, lithographic, mudstone, pyritic in part. SILTSTONE 20% White, light gray, arenaceous, argillaceous, limy, blocky, firm, chalky in part. LIMESTONE 100% Light to medium gray, light to medium gray brown, tan, 3680-3710 microcrystalline, dense, hard, tight, lithographic, mudstone, pyritic in part, 10% white, soft, chalky. LIMESTONE 100% Light to medium gray brown, medium to dark gray brown, 3710-40 crystalline, dense, lithographic, mudstone, light gray, white, soft, chalky, silty in part. LIMESTONE 100% Light to medium gray brown, medium to dark gray brown, 3740-70 crystalline, dense, lithographic, mudstone, light gray, white, soft, chalky, silty in part, 30% white, light gray, soft, chalky, silty. LIMESTONE 100% Light to medium gray brown, medium to dark gray brown, 3770-3800 crystalline, dense, lithographic, mudstone, light gray, white, soft, chalky, silty in part, 20% white, light gray, soft to firm, chalky, silty. LIMESTONE 100% Light to medium gray brown, medium to dark gray brown, 3800-30 crystalline, dense, lithographic, mudstone, light gray, white, soft, chalky, silty in part, 20% white, light gray, soft, chalky, silty.

SHALE 10% Red brown, blocky, dolomitic, silty in part, firm. 3830-60 SILTSTONE 20% White, light gray, arenaceous, limy, anhydritic, chalky in part. LIMESTONE 70% Light to medium gray, argillaceous, lithographic, mudstone. SHALE 10% Red brown, blocky, dolomitic, silty in part, firm, abundant salt casts, 3860-90 potash. LIMESTONE 50% Light to medium gray, argillaceous, lithographic, mudstone. SILTSTONE 20% Light gray, white, red brown, dolomitic, argillaceous, anhydritic. SHALE 20% Red brown, blocky, dolomitic, silty in part, firm, abundant salt casts, 3890-3920 potash. LIMESTONE 50% Light to medium gray, argillaceous, lithographic, mudstone. SILTSTONE 30% Light gray, white, red brown, dolomitic, argillaceous, anhydritic. SHALE 10% Red brown, blocky, dolomitic, firm, silty. 3920-50 SILTSTONE 10% White, arenaceous, argillaceous, limy, anhydritic. LIMESTONE 80% Light to medium gray brown, mottled, very fine to microcrystalline, dense, sucrosic texture in part, argillaceous, lithographic, mudstone. SILTSTONE 10% White, light gray, arenaceous, dolomitic, limy. 3950-80 LIMESTONE 90% Light to medium gray brown, crystalline, dense, lithographic, mudstone. LIMESTONE 100% Light to medium gray brown, crystalline, dense, lithographic, 3980-4010 mudstone, 20% light gray, white, chalky, soft, silty. SILTSTONE 20% White, light red brown, arenaceous, argillaceous, blocky, dolomitic, 4010-40 anhydritic. LIMESTONE 80% Light to medium gray brown, crystalline, dense, lithographic, mudstone, 20% light gray, white, chalky, soft, silty, abundant anhydrite fracture in fill. LIMESTONE 100% Light to medium gray brown, argillaceous, crystalline, dense, 4040-70 lithographic, mudstone, 10% white, soft, chalky, silty. LIMESTONE 100% Light to medium gray brown, crystalline, dense, argillaceous, 4070-4100 lithographic, mudstone, 10% white, soft, chalky, silty. LIMESTONE 100% Light to medium gray brown, crystalline, dense, argillaceous, 4100-30 lithographic, mudstone, 30% white, light gray, soft, chalky, silty.

LIMESTONE 100% Light to medium gray brown, crystalline, dense, argillaceous,

lithographic, mudstone, 20% soft.

4130-60

- 4160-90 LIMESTONE 100% Light to medium gray brown, crystalline, dense, argillaceous, lithographic, mudstone, 10% soft, abundant white, crystalline, sucrosic, anhydrite fracture fill.
- 4190-4220 LIMESTONE 100% Light to medium gray brown, crystalline, dense, argillaceous, lithographic, mudstone, 30% soft, abundant, anhydrite.
- 4220-50 LIMESTONE 100% Light to medium gray brown, crystalline, dense, lithographic, mudstone, 10% white, soft chalky, silty, abundant white, sucrosic, crystalline, anhydrite fracture in fill.
- 4250-80 LIMESTONE 90% Light to medium gray brown, crystalline, dense, lithographic, mudstone, 10% white, soft chalky,
- 4280-4310 LIMESTONE 60% Light to medium gray, tan, crystalline, dense, lithographic, mudstone. SILTSTONE 30% Light gray, argillaceous, limy, blocky, firm. SHALE 10% Red brown, silty, dolomitic, firm, blocky.
- 4310-40 LIMESTONE 70% Light to medium gray, tan, crystalline, dense, lithographic, mudstone. SILTSTONE 20% Light gray, argillaceous, limy, blocky, firm. SHALE 10% Red brown, silty, dolomitic, firm, blocky.
- 4340-70 LIMESTONE 60% Light to medium gray, tan, crystalline, dense, lithographic, mudstone. SILTSTONE 30% Light gray, argillaceous, limy, blocky, firm. SHALE 10% Red brown, silty, dolomitic, firm, blocky.
- 4370-4400 LIMESTONE 100% Light to medium gray brown, crystalline, dense, lithographic, mudstone, 10% white, soft, chalky, abundant white, chalky, crystalline, anhydrite fracture in fill.
- SHALE 10% Red brown, blocky, dolomitic, silty, salt dissolution casts.

  LIMESTONE 90% Light to medium gray brown, crystalline, dense, lithographic, mudstone, 10% white, soft, chalky, abundant white, chalky, crystalline, anhydrite fracture in fill, 10% soft.
- SHALE 10% Red brown, blocky, dolomitic, silty, salt dissolution casts.

  LIMESTONE 90% Light to medium gray brown, crystalline, dense, lithographic, mudstone, 10% white, soft, chalky, abundant white, chalky, crystalline, anhydrite fracture in fill, 10% soft.
- 4460-90 LIMESTONE 100% Light to medium gray, crystalline, dense, lithographic, mudstone, 30% white, soft, chalky, silty.

LIMESTONE 100% Light to medium gray brown, crystalline, dense, lithographic, 4490-4520 mudstone, 10% white, soft, chalky, abundant anhydrite fracture in fill. LIMESTONE 100% Medium to dark gray brown, dense, crystalline, lithographic, 4520-50 mudstone. LIMESTONE 100% Medium to dark gray brown, dense, crystalline, lithographic, 4550-80 mudstone, 10% white, soft, chalky, silty, abundant anhydrite fracture fill. LIMESTONE 100% Medium to dark gray brown, dense, crystalline, lithographic, 4580-4610 mudstone, 10% white, soft, chalky, silty, abundant anhydrite fracture fill. LIMESTONE 100% Medium to dark gray brown, crystalline, hard, dense, lithographic, 4610-40 mudstone, 10% white, light gray, chalky, silty, soft. LIMESTONE 100% Light to medium gray brown, crystalline, dense, lithographic, 4640-70 mudstone, abundant, white, sucrosic, anhydrite fracture in fill. LIMESTONE 100% Light to medium gray brown, crystalline, dense, lithographic, 4670-4700 mudstone, abundant, white, sucrosic, anhydrite fracture in fill, 10% soft, chalky. LIMESTONE 100% Light to medium gray brown, mottled, crystalline, dense, 4700-30 lithographic, mudstone, 20% white, soft chalky, abundant, sucrosic, anhydrite fracture in fill. LIMESTONE 100% Light to medium gray brown, mottled, crystalline, dense, 4730-60 lithographic, mudstone, 20% white, soft chalky, abundant, sucrosic, anhydrite fracture fill. LIMESTONE 100% Light to medium gray, tan, crystalline, argillaceous, lithographic, 4760-90 mudstone 10% white, chalky, soft, anhydrite fracture fill. LIMESTONE 100% Light to medium gray, tan, crystalline, argillaceous, lithographic, 4790-4870 mudstone 10% white, chalky, soft, anhydrite fracture fill. 4820-50 SILTSTONE 30% White, arenaceous, blocky, firm, anhydritic. LIMESTONE 70% Light to medium gray, tan, crystalline, argillaceous, lithographic, mudstone 10% white, chalky, soft, anhydrite fracture fill. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, 30% 4850-80 white, soft chalky. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, 40% soft, 4880-4910 chalky, silty.

4910-40 LIMESTONE 100% Light to medium gray brown, crystalline, dense, lithographic, mudstone, 30% white, soft, chalky. 4940-70 LIMESTONE 90% Light to medium gray brown, crystalline, dense, lithographic, mudstone, 10% soft, chalky. 4970-5000 LIMESTONE 100% Light to medium gray brown, crystalline, dense, lithographic, mudstone, 10% soft, chalky, abundant anhydrite fracture fill. 5000-30 LIMESTONE 100% Light to medium gray brown, crystalline, dense, argillaceous, firm to hard, lithographic, mudstone, abundant white, crystalline, sucrosic, anhydrite fracture in fill. 5030-60 LIMESTONE 80% Light to medium gray brown, , crystalline, dense, lithographic, mudstone, mottled in part. ANHYDRITE 20% White, chalky, soft, clear, crystalline, translucent. 5060-90 LIMESTONE 80% Light to medium gray brown, crystalline, dense, lithographic, mudstone, white, soft, chalky, 70%. SILTSTONE 10% White, light gray, argillaceous, calcareous, firm, blocky. ANHYDRITE 10% White, soft, chalky. LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, silty, 5090-5120 40% white soft, chalky. 5120-50 LIMESTONE 100% Light to medium gray, argillaceous, soft to firm, lithographic, mudstone, 60% white, soft, chalky. LIMESTONE 100% Light to medium gray, argillaceous, soft to firm, lithographic, 5150-80 mudstone, 40% soft, earthy, chalky. 5180-5210 LIMESTONE 100% Light to medium gray, light to medium gray brown, soft to firm in part, firm to hard, crystalline in part, mudstone, 30% white, soft, earthy, chalky. LIMESTONE 100% Light to medium gray brown, firm to hard, crystalline, dense, 5210-40 mudstone, 70% white, soft, chalky, earthy. 5240-70 LIMESTONE 90% Light to medium gray brown, firm to hard, crystalline, dense, mudstone, 70% white, soft, chalky, earthy. SILTSTONE 10% Red brown, arenaceous, argillaceous, slightly calcareous, blocky, firm, abundant salt casts.

- 5270-5300 LIMESTONE 70% Light to medium gray brown, firm to hard, crystalline, dense, mudstone, 70% white, soft, chalky, earthy.

  ANHYDRITE 30% White, soft, chalky, crystalline in part.
- 5300-30 LIMESTONE 90% Light to medium gray, earthy, argillaceous, mudstone, soft to firm, 50% white, soft, chalky, silty.

  ANHYDRITE 10% White, soft, chalky.
- 5330-60 SHALE 10% Red brown, dark red, silty, blocky, salt casts.

  LIMESTONE 80% Light to medium gray, earthy, soft to firm, argillaceous, lithographic, mudstone, 30% white, soft, chalky.

  ANHYDRITE 10% White, soft, chalky.
- 5360-90 LIMESTONE 100% Light to medium gray, earthy, soft to firm, argillaceous, lithographic, mudstone, 70% white, soft, chalky, silty.
- 5390-5420 LIMESTONE 80% Light to medium gray, earthy, soft to firm, argillaceous, lithographic, mudstone, 70% white, soft, chalky, silty.
  ANHYDRITE 20% White, chalky, soft.
- 5420-50 LIMESTONE 70% Medium to dark gray, soft to firm, argillaceous, earthy, lithographic, mudstone, silty in part.
  ANHYDRITE 30% White, soft, chalky.
- 5450-80 LIMESTONE 80% Light to medium gray, very fine to fine crystalline, sucrosic texture in part, argillaceous, lithographic, mudstone.

  ANHYDRITE 20% White, soft, chalky.
- 5480-5512 LIMESTONE 80% Light to medium gray, very fine to fine crystalline, sucrosic texture in part, argillaceous, lithographic, mudstone.

  ANHYDRITE 20% White, soft, chalky.
- 5510-40 LIMESTONE 70% Light to medium gray, very fine to fine crystalline, sucrosic texture in part, argillaceous, lithographic, mudstone.

  ANHYDRITE 30% White, soft, chalky.
- SHALE 10% Red brown, blocky, silty, limy.

  LIMESTONE 70% Light to medium gray, very fine to fine crystalline, sucrosic texture in part, argillaceous, lithographic, mudstone.

  ANHYDRITE 20% White, soft, chalky.

- 5570-5600 SHALE 40% Light gray, gray, blocky, waxy, slightly calcareous, greasy texture.

  LIMESTONE 30% Light to medium gray, very fine to fine crystalline, sucrosic texture in part, argillaceous, lithographic, mudstone.

  ANHYDRITE 30% White, soft, chalky.
- 5600-30 SHALE 30% Red brown, silty, blocky, dolomitic, light gray, gray, blocky, greasy texture.

  LIMESTONE 50% Light to medium gray, argillaceous, lithographic, mudstone ANHYDRITE 20% white, chalky, soft.
- 5630-60 SHALE 30% Red brown, silty, blocky, dolomitic, light gray, gray, blocky, greasy texture.

  LIMESTONE 30% Light to medium gray, argillaceous, lithographic, mudstone.

  ANHYDRITE 30% White, chalky, soft.
- 5660-90 SHALE 30% Red brown, silty, blocky, dolomitic, light gray, gray, blocky, greasy texture.

  LIMESTONE 50% Light to medium gray, argillaceous, lithographic, mudstone.

  ANHYDRITE 20% White, chalky, soft.
- 5690-5720 SHALE 50% Light to medium gray, firm, marly, dolomitic, smooth, greasy texture, red brown, silty, blocky, dolomitic, light gray, gray, blocky, greasy texture.

  LIMESTONE 20% Light to medium gray, argillaceous, lithographic, mudstone.

  ANHYDRITE 30% White, soft, chalky.
- 5720-50 SHALE 60% Light to medium gray, firm, marly, dolomitic, smooth, greasy texture, red brown, silty, blocky, dolomitic, light gray, gray, blocky, greasy texture.

  LIMESTONE 30% Light to medium gray, argillaceous, lithographic, mudstone.

  ANHYDRITE 10% White, soft, chalky.
- 5750-80 SHALE 70% Light to medium gray, firm, marly, dolomitic, smooth, greasy texture, red brown, silty, blocky, dolomitic, light gray, gray, blocky, greasy texture.

  LIMESTONE 20% Light to medium gray, argillaceous, lithographic, mudstone.

  ANHYDRITE 10% White, soft, chalky.
- 5780-5810 SHALE 50% Light to medium gray, firm, marly, dolomitic, smooth, greasy texture, red brown, silty, blocky, dolomitic, light gray, gray, blocky, greasy texture.

  LIMESTONE 10% Light to medium gray, argillaceous, lithographic, mudstone.

  ANHYDRITE 20% White, soft, chalky.
- 5810-40 SHALE 80% Light to medium gray, dolomitic, smooth, greasy texture, red brown, silty, blocky, firm.

  LIMESTONE 10% Light to medium gray, argillaceous, lithographic, mudstone.

  ANHYDRITE 10% White, soft, chalky.

LIMESTONE 100% Light to medium gray, argillaceous, lithographic, mudstone, tan, 5840-70 microcrystalline, dense, hard, tight, mudstone. LIMESTONE 100% Light gray brown, tan, microcrystalline, dense, hard, mudstone. 5870-5900 LIMESTONE 100% Light gray brown, light brown, tan, mottled, oolitic, tight, 5900-30 crystalline matrix, packstone to grainstone, mudstone matrix. LIMESTONE 100% Light gray brown, light brown, tan, mottled, oolitic, tight, 5930-55 crystalline matrix, packstone to grainstone, mudstone, matrix. LIMESTONE 100% Medium to dark gray, argillaceous, lithographic, mudstone, light to 5955-90 medium gray, silty, soft to firm, chalky 30%. LIMESTONE 100% Medium to dark gray, argillaceous, lithographic, mudstone, light to 5990-6020 medium gray, silty, soft to firm, chalky 30%, 10% light gray, chalky, firm, mudstone, silty. LIMESTONE 100% Medium to dark gray, argillaceous, crystalline, lithographic, 6020-50 mudstone, 10% light gray, soft to firm, chalky mudstone. LIMESTONE 10% Medium to dark gray, argillaceous, crystalline, lithographic, mudstone, 6050-6080 10% light gray, soft to firm, chalky mudstone, light to medium gray brown, light brown, tan, mottled, packstone to grainstone, oolitic, mudstone matrix, very fine to fine crystalline in parts, sucrose texture in part, tight, no show, 70%. 6080-6110 LIMESTONE 100% Light brown, mottled, oolitic, very fine to fine crystalline in part, packstone to grainstone, mudstone matrix, tight, no show. LIMESTONE 10% Light brown, mottled, oolitic, very fine to fine crystalline in part, 6110-40 packstone to grainstone, mudstone matrix, tight, no show. SANDSTONE 90% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 98% unconsolidated, strong hydrocarbon odor, brown oil stain, rainbows on wash water, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring cut, 10-14% intergranular porosity.

SANDSTONE 100% White, clear, quartzose, light brown, fine to medium grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 70%

unconsolidated, strong hydrocarbon odor, brown oil stain, rainbows on wash water, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring cut, 10-

6140-70

14% intergranular porosity.

- 6170-6200 SANDSTONE 100% White, clear, light red orange, quartzose, very fine to medium grained, light brown, fine to medium grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 95% unconsolidated, strong hydrocarbon odor, brown oil stain, rainbows on wash water, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring cut, 10-14% intergranular porosity.
- SANDSTONE 100% White, clear, light red orange, very fine to medium grained, quartzose, light brown, fine to medium grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 90% unconsolidated, strong hydrocarbon odor, brown oil stain, rainbows on wash water, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring cut, 10-14% intergranular porosity.
- SANDSTONE 100% White, clear, light red orange, very fine to medium grained, quartzose, light brown, fine to medium grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 98% unconsolidated, strong hydrocarbon odor, brown oil stain, rainbows on wash water, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring cut, 10-14% intergranular porosity.
- SANDSTONE 100% White, clear, light red orange, very fine to medium grained, quartzose, light brown, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 95% unconsolidated, strong hydrocarbon odor, brown oil stain, rainbows on wash water, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring cut, 10-14% intergranular porosity.
- 6290-6320 SANDSTONE 100% White, clear, light red orange, very fine to medium grained, quartzose, light brown, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 95% unconsolidated, strong hydrocarbon odor, brown oil stain, rainbows on wash water, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring cut, 10-14% intergranular porosity.
- SANDSTONE 100% White, clear, light red orange, very fine to medium grained, quartzose, light brown, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 95% unconsolidated, strong hydrocarbon odor, brown oil stain, rainbows on wash water, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring cut, 10-14% intergranular porosity.
- 6350-80 SHALE 20% Light gray green, waxy, silty, greasy texture, smooth, red brown, silty, dolomitic, firm.

  SILTSTONE 80% Red brown, dark red, arenaceous, argillaceous, dolomitic, firm to hard, mottled in part, pink

- 6380-6410 SHALE 20% Light gray green, waxy, silty, greasy texture, smooth, red brown, silty, dolomitic, firm.

  SILTSTONE 80% Red brown, dark red, arenaceous, argillaceous, dolomitic, firm to hard, mottled in part, pink.
- 6410-40 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fine to poorly sorted, clay matrix, siliceous cement, friable, 98% unconsolidated, brown oil stain on casts, odor, rainbows on wash water, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring, 10-14% intergranular porosity.
- SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 95% unconsolidated, brown oil stain on casts, odor, rainbows on wash water, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold, residual ring cut, 10-14% intergranular porosity.
- 6470-6500 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poorly sorted, clay matrix, siliceous cement, friable, 95% unconsolidated, brown oil stain on casts, odor, rainbows on wash water, yellow white oil fluorescence, yellow white milky cut fluorescence, yellow gold residual ring cut, 10-14% intergranular porosity.
- 6500-30 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poorly sorted, clay matrix, siliceous cement, friable, 98% unconsolidated, mixed zone, weak to no show.
- 6530-60 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poor sorted, clay matrix, siliceous cement, friable, 98% unconsolidated, 10-14% intergranular porosity, no show.
- 6560-90 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poorly sorted, clay matrix, siliceous cement, friable, 98% unconsolidated, no show.
- 6590-6620 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poorly sorted, clay matrix, siliceous cement, friable, 98% unconsolidated, no show.
- 6620-50 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poorly sorted, clay matrix, siliceous cement, friable, 98% unconsolidated, no show.
- 6650-80 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poorly sorted, clay matrix, siliceous cement, friable, 98% unconsolidated, no show.

- 6680-6710 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poorly sorted, clay matrix, siliceous cement, friable, 98% unconsolidated, no show.
- 6710-40 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poorly sorted, clay matrix, siliceous cement, friable, 98% unconsolidated, no show.
- 6740-70 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poorly sorted, clay matrix, siliceous cement, friable, 85% unconsolidated, no show.
- 6770-6810 SANDSTONE 100% White, clear, quartzose, fine to medium grained, sub angular to rounded, fair to poorly sorted, clay matrix, siliceous cement, friable, 70% unconsolidated, no show.

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E. Registered Professional Engineer stevehash@exactengineering.com

# CONFIDENTIAL PLEASE!

September 6, 2005

Mr. Dustin Doucet Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, UT 84114-5801

Re:

Kings Meadow Ranches 17-7 well

Sec 17 T23S R01W Sevier Co, UT API# 43-041-30040

BLM Lease No. UTU-73528

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed our daily completion activity reports for the subject well. Wolverine's Grand Rapids, Michigan office will send final completion form(s). We respectfully request that the enclosed information remain confidential.

Very Truly Yours,

Chris Nicely

**Engineering Technician** 

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Helene Bardolph

EXACT Engineering, Inc.

well file

RECEIVED SEP 0 9 2005

DIV. OF OIL, GAS & MINING

page 1 of 3

New Completion
7" 23# HCP110 @ 6810' TD
PBTD 6765' on 6/23/05; CBL TD 6690'
Perfs – 6258-6270, 6288-6300, 6311-6321
Perfs – 6335-6337, 6343-6345, 6348-6352
ESP set @ na
GL to RKB: 17'

### "TIGHT HOLE"

08/16/05

FIRST COMPLETION REPORT — during July cleaned location, installed 11" 5m x 7-1/16" 5m tbg head with (2) 2-1/16" 5m gate valves w/ single valve tree, move in 4% KCL treating fluid and flowback tanks. Offload 2-7/8" 6.5ppf N80 EUE 8rd new tbg. MIRU Pool Well Service Unit @ 3pm from WF 17-6 (8-1). ND wellhead & flowline, NU 7-1/16" 5m BOP, set up pipe racks & load with tbg & strap. Note: CBL log run on 7/22/05 found good cement w/ TOC @ 4810', short marker jt @ 5971-5991.

Plan: TIH w/ bit & scraper & pump pickle job. CMOL: DL Naylor

Est Daily Completion Cost Est Cumulative Comp Cost

Est Dryhole Cost

Est Total Well Cost to date

Completion AFE \$

NA

Dryhole AFE

\$ NA

Total Well Cost AFE

NA

08/17/05

Pick up 6-1/4" bit & 7" csg scraper on 2-7/8" tbg.Tag up @ 6760' kb with 220 jts, set tbg 15' off btm, close rams, RU Halco to tbg. Hold safety mtg, pump tubular cleanup job consisting of 15 bbls caustic wash, 12 bbls chemical wash, 15 bbl gel water, 10 bbl FW spacer, 7 bbl 7.5% HCL. Displace down tbg with 59 bbl. FW to surface, switch lines to csg, reverse hole with 245 bbl 4% KCL sending dirty acid water to pit. Hole clean after 145 bbls, RD Halco. RU swab, swabbed well down to 2500' fs, SWI & SDFN. Tomorrow's plan: POOH Perf & run tools CMOL: DL Naylor.

Est Daily Completion Cost

**Est Cumulative Comp Cost** 

Est Dryhole Cost

Est Total Well Cost to date

Completion AFE Dryhole AFE

otal Well Cost AFE

8/18/05

POOH RU WellServ WLU. Perforated in two gun runs the (6) Upper Navajo 1 intervals listed below with 6 jpf (288 holes total) per Spectral Density – Dual Spaced Neutron log dated 22-Jun-2005. Used 4" slick gun, Titan 39 gm charges for .43" hole diam and 59" penetration, RD WLU. Make up 7" TS RBP,RT, SS, 7" HD packer & TIH, set plug @ 6445' pull up to 6190' RU WellServ WLU run CCL & correlate plug perfs & pkr. Leave pkr. swinging and SWI & SDFN. Tomorrow's plan: Swab each zone separately. CMOL: DL Naylor

(1)	Upr Navajo 1	6258-6270	12	4 jpf	48	90	.43	59"
(2)	Upr Navajo 1	6288-6300	12	4 jpf	48	90	.43	59"
(3)	Upr Navajo 1	6311-6321	10	4 jpf	40	90	.43	59"
(4)	Upr Navajo 1	6335-6337	2	4 jpf	8	90	.43	59"
(5)	Upr Navajo 1	6343-6345	2	4 jpf	8	90	.43	59"
(6)	Upr Navajo 1	6348-6352	4	4 jpf	16	90	.43	59"
(0)	total	Gr 94/net42	42	-	168			

Est Daily Completion Cost Est Cumulative Comp Cost

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New Completion 7" 23# HCP110 @ 6810' TD PBTD 6765' on 6/23/05; CBL TD 6690' Perfs – 6258-6270, 6288-6300, 6311-6321 Perfs – 6335-6337, 6343-6345, 6348-6352 ESP set @ na GL to RKB: 17'

#### "TIGHT HOLE"

8/19/05

100 psi. SIPP, TIH & set packer @ 6328, plug @ 6445, RU swab,fuid @ surface, made 5 swab runs and recovered 34 BLF, last 3 runs show oil, last sample 95% oil. EFL 5100'. Fill tubing w/30 bbl. 4% KCL water. Release packer, pull up & set plug @ 6328 & packer @ 6279. RU swab, made 7 swab runs and recovered 61 BLF, last two 95% oil. EFL 4500', pulling from 5000'. Left open to tank overnight, Started to flow @ 10pm. made 42 BO in 8 hrs 5,25BPH. Plan: pull up & swab top zone. CMOL: DL Naylor

Est Daily Completion Cost Est Cumulative Comp Cost

8/20/05

Zero FTP, Reverse tubing volume, release tools, pull up set plug @ 6280, set packer @ 6226 RU swab,fuid @ surface, made 9 swab runs and recovered 79 BLF, last 3 runs 100% oil,EFL 3300'. Release pkr. reverse tubing volume, release tools, TIH, set plug @ 6445, set packer @ 6328 RU swab, made 4 swab runs and recovered 33 BLF, last run 100% oil,EFL 5100'. SWI SDFN Plan: Acidize. CMOL: DL Naylor

Est Daily Completion Cost Est Cumulative Comp Cost

\$

8/21/05

SIPP 0, SICP 100 psi. RU Halco, QC 7-1/2% acid mix @ 1.15 sg and 4% KCI @ 1.04 sg, OK. Hold

safety mtg & test P&L to 6000 psi. Individually acidize each interval as follows:

			Donad	Break	BD	ATR	ATP	ISDP	5m	10m	15m	Comments
#	Ft	Plan	Pmpd Gals	psi	bpm	bpm	psi	psi	psi	psi	psi	
		gals	800	2730	2	4.2	2500	1750	860	560	400	Slight ball action
4	8	800	2200	2500	1.2	4.2	2120	1750	750	468	320	Good ball action
3	22	2200 1200	1200	2640	1.5	4	2200	1250	700	455	330	Some ball action
$\frac{2}{4}$	42	1900	1900	1750	2.2	4.2	1850	1400	635	435	320	No Balls
	42	1300	1000		1	1		i	1			

Release tools & set packer @ 6626 plug @ 6435, reverse out w/ 60bbl. 4% kcl water, RU to swab, made 17 swab runs, 1st oil cut on 1st run, 25%. Recovered 209 bbls fluid swabbing to tank. Last sample 95% oil. Left open to tank. SDFN. Well started flowing at 11pm, recovered 85 BO overnight in 8 hrs, avg 10.6 bphr. Will continue to cleanup. CMOL: DL Naylor

Est Daily Completion Cost

Est Cumulative Comp Cost



8/22/05

SDF Sunday, flowed well on open chk 23 hrs, recovered 270 BO, avg 11.7 bophr. FIRST OIL SALES FROM KMR 17-7 TO HOLLY REFINERY ON 8/21/05. Total production to date 644 BO, total sales to date 289 BO. Plan: Pull pkr & RBP, run packer & tree up. CMOL: SRHash

Est Daily Completion Cost
Est Cumulative Comp Cost



8/23/05

Reverse circ 213 bbls 4% KCl, last 100 bbls holding 200 psi BP, before well would quit flowing. Released pkr, TIH & latched RBP, POOH w/ tbg & LD tools. Picked up 6' x 2-7/8" N80 sub, 4' x 2-7/8" perf sub, 7" A1X pkr, 2' x 2-7/8" sub, 1 jt tbg, 2.31" X nipple & TIH w/ 201 jts 2-7/8" tbg (202 jts total). Set pkr @ 6206 & land EOT @ 6223. ND BOP & NU tree. Test annulus to 1000 psi. RU to swab, swabbed 91 bbls fluid in 8 runs, EFL 1500' fs, 90% oil, SDFN @ 9pm, well flowing to tank by 10pm, Recovered 60 BO swabbing and 94 BO overnight in 8 hrs flowing, avg 12 bophr. Will continue to flow well on test. Plan: RD & move to WF 17-5. CMOL: SRHash Est Daily Completion Cost \$ Est Cumulative Comp Cost

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Complete well design, construction & management, drilling, completion, production, pipelines, evaluations, due diligence, acquisitions, procedures, temporary personnel and field supervision

page 3 of 3

New Completion 7" 23# HCP110 @ 6810' TD PBTD 6765' on 6/23/05; CBL TD 6690' Perfs – 6258-6270, 6288-6300, 6311-6321 Perfs – 6335-6337, 6343-6345, 6348-6352 ESP set @ na GL to RKB: 17'

"TIGHT HOLE"

08/24/05

Flwd 285 BO and trace water in 24 hrs, FTP 0, chk open.

Total production to date 1083 BO; total sales to date 798 BO CMOL: SRHash Will continue to flow

and run ESP ~1week

Est Daily Completion Cost \$

Est Cumulative Comp Cost \$



### **EXACT Engineering, Inc.**

www.exactengineering.com

415 S. Boston Ave., Suite 734, Tulsa, OK 74103 • (918) 599-9400 • (918) 599-9401 (fax)

Steven R. Hash, P.E. Registered Professional Engineer stevehash@exactengineering.com

### CONFIDENTIAL PLEASE!

CONFIDENTIAL

September 19, 2005

Mr. Dustin Doucet Utah Division of Oil, Gas & Mining 1594 West North Temple, Suite 1210 Salt Lake City, UT 84114-5801

Re:

Kings Meadow Ranches 17-7 well Sec 17 T23S R01W Sevier Co, UT API# 43-041-30040 BLM Lease No. UTU-73528

Dear Mr. Doucet,

On behalf of Wolverine Gas and Oil Company of Utah, LLC, please find enclosed our final daily completion activity reports for the subject well for August 24 through September 15, 2005. Wolverine's Grand Rapids, Michigan office will send final completion form(s). We respectfully request that the enclosed information remain confidential.

Very Truly Yours,

Chris Nicely

**Engineering Technician** 

copy without enclosures via email to:

Wolverine Gas & Oil Co of Utah, LLC: Helene Bardolph

**EXACT Engineering, Inc.** 

well file

DIV. OF OIL, GAS & MINING

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New Completion 7" 23# HCP110 @ 6810' TD PBTD 6765' on 6/23/05; CBL TD 6690' Perfs – 6258-6270, 6288-6300, 6311-6321 Perfs – 6335-6337, 6343-6345, 6348-6352 ESP intake set @ 5157' md; 5015' tvd GL to RKB: 17'

### "TIGHT HOLE"

09/10/05 Flwd 247 BO allocated thru main bty in 23 hrs from 3pm 9/8 thru 2pm 9/9, FTP 20 psi on open chk

09/11/05 Flwd 297 BO allocated thru main bty in 24 hrs from 2pm 9/9 thru 2pm 9/10, FTP 20 psi on open chk

09/12/05 Flwd 227 BO allocated thru main bty in 24 hrs from 2pm 9/10 thru 2pm 9/11, FTP 20 psi on open chk

Flwd 200 BO allocated thru main bty in 17 hrs from 2pm 9/11 thru 7am 9/12. FTP 20 on open chk RU Pool WSU, top kill well with 20 bbls KCl, ND tree & NU BOPE w/ annular & test. Release 7" Arrowset pkr @ 6206', pump long way w/ 5 bbls, reverse tbg clean with 30 bbls KCl. Lay down 35 jts tbg & stand back remaining 167 jts, lay down tools. RU Baker Centrilift to run ESP, pick up motor, seal & pump w/ 2.25 SN & TIH banding #4 cable 3 bands per jt, splice feed thru and land btm of tbg @ 5173' md. ND BOPE & NU wellhead. Complete tbg setting report to follow. Hook up flowlines, air supply & shutdowns. Pump in operation and on test @ 7:00pm on a 24/64" chk, PTP 150 psi. This am Pmpd 468 bbls fluid in 14 hrs, 256 BO & 212 BLW. Sample this am 5% water, reduce to 14/64" chk, PTP 300 psi, pumping ARO 29 bphr.

09/14/05 Pmpd 188 bbls fluid to test tank in 7 hrs on a 14/64" to 12/64" chk, 350-400 psi PTP from 7am to 2pm 9/13/05. Running 52 hz pump speed, samples trace water; est production at 184 BO & 4 BLW

Production Tubina Settina - run in hole on 9/12/05

, 500	Description	SN	Length	Top @ kb
1	4.00"od, 54hp, 1020v,35a,FMH motor	21F-0068746	10.73	5163 md
<del>-</del>	4.0"od, FSB3 DM SB SFS seal	31F-0071888	5.60	5157 md
<u> </u>	4.0"od, type P8, model 400P, 147 stg pump w intake	01F-0007388	13.40	5144 md
1	2-3/8" x 2-7/8" EUE 8rd xover		.80	
1	2-7/8" EUE 8rd SN (2.25" min id)		1.10	5142 md
1	2-7/8" 6.5# N80 EUE 8rd handling sub		4.35	1
167	2-7/8" 6.5# N-80 EUE 8rd tbg joints		5120.39	•
	Overall		5156.37	
	Set below KB (GL to KB = 17')		+17.0	
	EOT set @ KB	*	5173.37	
	EOT 5173'kb md; intake @ 5157'kb md (5015' tvd)			
	Note: there is NO check or drain valve in this well			errane
	and galant August very gift of a plant in the great or side and in the few properties of the side of the great of the grea			

09/15/05 Pmpd 667 bbls fluid to test tank in 24 hrs on 12/64" chk @ 550 psi PTP from 2pm 9/13 to 2pm 9/14; running 51 hz. Samples trace water, estimate production at 647 BO & 20 BW; operating fluid level is 1388' fs, choke plugging occasionally. Total production to date 6314 BO, TURNED WELL OVER TO PRODUCTION @ 2pm 9/14/05 – FINAL COMPLETION REPORT – Thank you!

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page 3 of 4

New Completion 7" 23# HCP110 @ 6810' TD PBTD 6765' on 6/23/05; CBL TD 6690' Perfs – 6258-6270, 6288-6300, 6311-6321 Perfs – 6335-6337, 6343-6345, 6348-6352 ESP intake set @ 5157' md; 5015' tvd GL to RKB: 17'

### "TIGHT HOLE"

08/24/05	and run ESP ~1week	er in 24 hrs, FTP 3 BO; total sales \$ 2000	0, chk open. to date 798 BO CMOL: SRH Est Cumulative Comp Cost	
	Est Daily Completion Cost	·	•	<b>V</b> 100,000
08/25/05	Flwd 269 BO and trace water	er in 24 hrs, FTP	0, chk open.	
08/26/05	Flwd 270 BO and trace water	er in 24 hrs, FTP	0, chk open.	
08/27/05	Flwd 268 BO and trace water	er in 24 hrs, FTP	0, chk open	
08/28/05	Flwd 277 BO and trace water Total production to date 216	er in 25 hrs, FTP 7, total sales to c	0, chk open late 1983 BO	CONFIDENTIAL
08/29/05	Flwd 261 BO & trace water i	n 23 hrs on oper	chk, FTP 0 psi	
08/30/05	Flwd 262 BO & trace water i	n 24 hrs on open	chk, FTP 0 psi	
08/31/05	Flwd 260 BO & trace water i	n 24 hrs on open	chk, FTP 0 psi	
09/01/05	Flwd 266 BO & trace water i	n 24 hrs on open	chk from 2pm 8/30 to 2pm 8/	31, FTP 0 psi
09/02/05	Total production to date 347	5 BO (less some	chk from 2pm 8/31 to 2pm 9/ water drawoff); Total frac tan eport turned over to productio	k sales from inception on
09/03/05	Flwd 289 BO & trace water in Total production to date 376 Production now allocated dates	4 BO. Switched	chk from 2pm 9/01 to 4pm 9/ flow from frac tanks thru flowli test	02, FTP 0 psi ine to main battery.
09/04/05	Flwd 233 BO allocated thru	main bty in 22 hr	s from 4pm 9/2 thru 2pm 9/3,	FTP 20 psi on open chk
09/05/05	Flwd 259 BO allocated thru in Shut well in at 2pm 9/4/05 for	main bty in 24 hr or BHPBU	s from 2pm 9/3 thru 2pm 9/4, l	FTP 20 psi on open chk
09/06/05	Well shut in 24 hrs for BHPB	SU from 2pm 9/4	to 2pm 9/5; SITP 400 psi in 24	4 hrs
09/07/05	Well shut in 24 hrs for BHPB	U from 2pm 9/5	to 2pm 9/6; SITP 410 psi in 48	3 hrs
09/08/05	Well shut in 24 hrs for BHPB	U from 2pm 9/6	to 2pm 9/7; SITP 420 psi in 72	2 hrs
09/09/05	Well shut in 25 hrs for BHPB battery @ 3pm 9/8/05.	U from 2pm 9/7	to 3pm 9/8; SITP 420 psi in 97	7 hrs; turn well on to main

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שווו טב טוו מים בייייייי

	FORM 9						
	DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINII	NG	5.LEASE DESIGNATION AND SERIAL NUMBER FEE				
SUNDF	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:						
	sals to drill new wells, significantly deepen ex igged wells, or to drill horizontal laterals. Use		7.UNIT or CA AGREEMENT NAME: WOLVERINE				
1. TYPE OF WELL Oil Well			8. WELL NAME and NUMBER: KINGS MEADOW RANCHES 17-7				
2. NAME OF OPERATOR: WOLVERINE GAS & OIL COMP	ANY OF UTAH, LLC		<b>9. API NUMBER:</b> 43041300400000				
3. ADDRESS OF OPERATOR: One Riverfront Plaza 55 Camp	au NW, Grand Rapids, MI, 49503	PHONE NUMBER: 616 458-1150 Ext	9. FIELD and POOL or WILDCAT: COVENANT				
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1680 FNL 2217 FWL			COUNTY: SEVIER				
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: SENW Section: 17	P, RANGE, MERIDIAN: Township: 23.0S Range: 01.0W Meridian: S		STATE: UTAH				
11. CHE	CK APPROPRIATE BOXES TO INDICATE	NATURE OF NOTICE, REPORT,	OR OTHER DATA				
TYPE OF SUBMISSION		TYPE OF ACTION					
	ACIDIZE	ALTER CASING	CASING REPAIR				
✓ NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME				
7/12/2010	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE				
SUBSEQUENT REPORT	☐ DEEPEN ✓	FRACTURE TREAT	☐ NEW CONSTRUCTION				
Date of Work Completion:	OPERATOR CHANGE	PLUG AND ABANDON	☐ PLUG BACK				
_	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION				
SPUD REPORT Date of Spud:	✓ REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON				
	UBING REPAIR	VENT OR FLARE	WATER DISPOSAL				
☐ DRILLING REPORT	WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION				
Report Date:	☐ WILDCAT WELL DETERMINATION	OTHER	OTHER: Work-over				
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  Wolverine Gas and Oil Company of Utah, LLC plan to undertake a work-over on the KMRI 17-7, which is part of the Covenant Field. Based on the analysis of the well, the existing perforations are under performing. Therefore, we intend to fracture stimulate through the existing perf interval at 6258-6270′ MD. Based on the results of the frac treatment, we also intend to add new perforations in the Upper Navajo at 6132-6152′MD, 6165-6168′ MD, 6182-6195′ MD, 6207-6214′ MD, and 6231-6246′ MD. Once the work in completed, the well will be returned to production.  By:							
NAME (PLEASE PRINT) Helene Bardolph	<b>PHONE NUMBER</b> 616 458-1150	TITLE Engineering Administrative Assistant					
SIGNATURE	010 430-1130	DATE					
N/A		6/11/2010					

	FORM 9						
	DEPARTMENT OF NATURAL RESOUR DIVISION OF OIL, GAS, AND M		5.LEASE DESIGNATION AND SERIAL NUMBER: FEE				
SUNDR	S ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:					
Do not use this form for propos bottom-hole depth, reenter plu DRILL form for such proposals.	sals to drill new wells, significantly deepe gged wells, or to drill horizontal laterals.	en existing wells below current Use APPLICATION FOR PERMIT TO	7.UNIT or CA AGREEMENT NAME: WOLVERINE				
1. TYPE OF WELL Oil Well			8. WELL NAME and NUMBER: KINGS MEADOW RANCHES 17-7				
2. NAME OF OPERATOR: WOLVERINE GAS & OIL COMPA	ANY OF UTAH, LLC		9. API NUMBER: 43041300400000				
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11. CHE	CK APPROPRIATE BOXES TO INDICA	ATE NATURE OF NOTICE, REPORT,	OR OTHER DATA				
TYPE OF SUBMISSION		TYPE OF ACTION					
	ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR				
NOTICE OF INTENT Approximate date work will start:	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME				
	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE				
✓ SUBSEQUENT REPORT  Date of Work Completion:	DEEPEN	✓ FRACTURE TREAT	□ NEW CONSTRUCTION				
11/4/2010	OPERATOR CHANGE	PLUG AND ABANDON	☐ PLUG BACK				
SPUD REPORT	☐ PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION				
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON				
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL				
DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	APD EXTENSION				
	☐ WILDCAT WELL DETERMINATION	OTHER	OTHER:				
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  The Kings Meadow Ranches 17-7 was successfully fracture stimulated through the existing perforation interval at 6258′ – 6270′ and a total of 47,900 lbs occepted by the 20/40 Intermediate Strength Proppant (ISP) were placed into the formation of Prior to pumping the fracture treatment a Differential Fracture Injection Test, Gas and Mining (DFIT) was pumped with 3780 gallons of 2% KCL completion fluid at a part of SBPM and an average pressure of 3211 psi. During the fracture treatment a maximum rate of 25.3 BPM and 4,068 psi was reached during which time 57,093 gallons of fluid were pumped down the wellbore. ESP equipment was rerun, and the well returned to production.							
NAME (PLEASE PRINT) Helene Bardolph	PHONE NUMBE 616 458-1150	R TITLE Engineering Administrative Ass	sistant				
SIGNATURE N/A	313 130 1130	DATE 12/1/2010	DATE				